JVC

SERVICE MANUAL

COLOUR TELEVISION

AV-21U4/SK

BASIC CHASSIS
CW

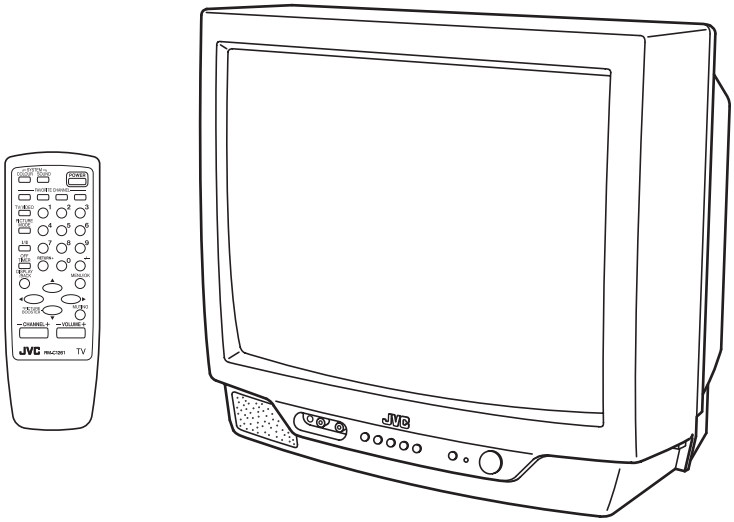

TABLE OF CONTENTS

1 PRECAUTION 1-3
2 SPECIFIC SERVICE INSTRUCTIONS 1-4
3 DISASSEMBLY 1-6
4 ADJUSTMENT 1-12
5 TROUBLESHOOTING 1-25

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No.YA252
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SPECIFICATION

Items		Contents
Dimensions (W × H × D)		50.3cm × 46.7cm × 48.0cm
Mass		20kg
TV RF System		B, G, I, D, K
Colour System	TV Mode	PAL / SECAM
	Video Mode	PAL / SECAM / NTSC3.58 / NTSC4.43
Receiving Frequency	VHF Low	46.25MHz ~ 140.25MHz (AS0 ~ S6)
	VHF High	147.25MHz ~ 423.25MHz (S7 ~ S36)
	UHF	431.25MHz ~ 863.25MHz (S37 ~ C57)
	CATV	Mid : X ~ Z, S1 ~ S10 Super: S11 ~ S20 Hyper: S21 ~ S41
Intermediate Frequency	VIF	38.0MHz
	SIF	D/K: 31.5MHz (6.5MHz) I: 32.0MHz (6.0MHz) B/G: 32.5MHz (5.5MHz)
Colour Sub Carrier Frequency		4.43MHz (PAL), 4.40MHz/4.25MHz (SECAM), 3.58MHz/4.43MHz (NTSC)
Aerial Input Terminal		75Ω unbalanced, coaxial
Power Input		AC110V ~ AC240V, 50Hz / 60Hz
Power Consumption		81W (Max.) / 57W (Avg.)
Picture Tube ⚠		A51KQK99X01 21-inch, aspect ratio 4:3, convetional square face type, tinted
Screen Size		Visible size : 50.5cm (Diagonal) / 40.4cm × 30.3cm (H × V)
High Voltage		26.5kV±1.5kV (at zero beam current)
Speaker		5cm × 9cm, Oval type × 2
Audio Output		3W
Video / Audio Input [1/2]	Video [1/2]	1V(p-p), negative sync, 75Ω, RCA pin jack × 2
	Audio [1/2]	500mV(rms) (-4dBs), high impedance, RCA pin jack × 2
Video / Audio Output	Video	1V(p-p), 75Ω, RCA pin jack × 1
	Audio	500mV(rms)(-4dBs), Low impedance (400Hz when modulated 100%), RCA pin jack × 1
Headphone		3.5mm stereo mini jack × 1
Remote Control Unit		RM-C1261-2H (AA/R06/UM-3 battery × 2)

Design & specifications are subject to change without notice.

SECTION 1
PRECAUTION

1.1 SAFETY PRECAUTIONS

(1) The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.

(2) Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.

(3) Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual**. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.

(4) **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED (NEUTRAL) : (⏚) side GND and EARTH : (⏚) side GND.
Don't short between the LIVE side GND and ISOLATED (NEUTRAL) side GND or EARTH side GND and never measure the LIVE side GND and ISOLATED (NEUTRAL) side GND or EARTH side GND at the same time with a measuring apparatus (oscilloscope etc.). If above note will not be kept, a fuse or any parts will be broken.

(5) If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See B1 POWER SUPPLY check).

(6) The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.

(7) Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.

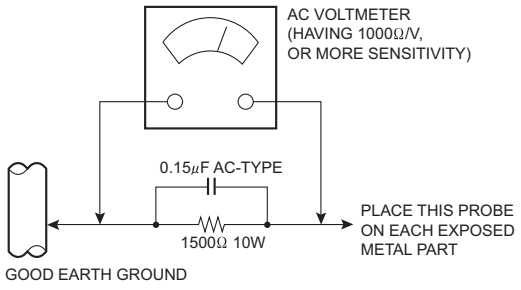
(8) When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

(9) **Isolation Check (Safety for Electrical Shock Hazard)**
After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screw heads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

a) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second. (. . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

b) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

Alternate Check Method
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000Ω per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

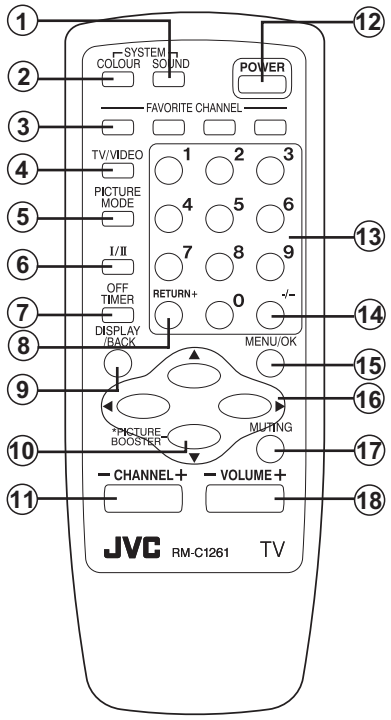
2.1 FEATURES

- New chassis design enables use of an interactive on-screen control.
- Pure flat CRT produces fine textured picture in every detail.
- Wide range voltage (110V ~ 240V) for AC power input.
- With AUDIO/VIDEO input terminals.
- I^2C bus control utilizes single chip ICs.
- By means of AUTO PROGRAM, the TV stations can be selected automatically and the TV channels can also be rearranged automatically.
- Built-in OFF TIMER & RETURN +.

2.2 FUNCTIONS

■ REMOTE CONTROL UNIT

RM-C1261-2H



① SOUND SYSTEM key	⑪ CHANNEL (-/+) keys
② COLOUR SYSTEM key	⑫ POWER key
③ FAVORITE CHANNEL keys	⑬ Number keys
④ TV / VIDEO key	⑭ -/-- key
⑤ PICTURE MODE key	⑮ MENU/OK key
⑥ Not used	⑯ MENU (▲/▼, ◄/►) keys
⑦ OFF TIMER key	⑰ MUTING key
⑧ RETURN + key	⑱ VOLUME (-/+) keys
⑨ DISPLAY / BACK key	
⑩ PICTURE BOOSTER key MENU (▼) key	

2.3 MAIN CPU [MAIN PWB : IC701] PIN FUNCTION

Pin no.	Pin name	I/O	Function
1	VssP2	-	GND
2	VssC4	-	GND
3	V1.8C4	I	1.8V (Digital)
4	V3.3A3	I	3.3V
5	VrefP_Sdac	I	3.3V (Positive)
6	VrefN_Sdac	-	GND
7	VrefP_Sdac	I	3.3V (Negative)
8	VrefN_Sdac	-	GND
9	VrefP_Sdac	I	3.3V (Positive)
10	XtalIn	I	24.576MHz for system clock
11	XtalOut	O	24.576MHz for system clock
12	VssA1	-	GND
13	NECK	I	V-guard input/ I/O switch
14	CONT	I	1.8V regulator control
15	V5P1	I	+5V
16	Ph2	-	Phase-2 filter
17	Ph1	-	Phase-1 filter
18	Gnd1	-	GND
19	SecPll	-	SECAM PLL decoupling
20	Dec8G	-	Bandgap decoupling
21	EW	O	East-West drive output
22	VDRB-	O	Vertical drive B output
23	VDRA+	O	Vertical drive A output
24	Vif1	I	Video IF input 1
25	Vif2	I	Video IF input 2
26	Vsc	-	Vertical sawtooth capacitor
27	Iref	I	Reference current input
28	GndIF	-	GND
29	Sif1	I	Sound IF input 1
30	Sif2	I	Sound IF input 2
31	AGC	O	Tuner AGC output
32	EHT	I	EHT/overvoltage protection input
33	Ssif/Refln/Avl/RefOut	O	Automatic Volume Levelling/ sound IF input / subcarrier reference output / external reference signal input for I signal mixer for DVB operation
34	L3	I	Audio-L3 input (left signal)
35	R3	I	Audio-R3 input (right signal)
36	L-OUT	O	Audio L output
37	R-OUT	O	Audio R output
38	DecsDem	-	Decoupling sound demodulator
39	QssO/AmO/AudeEm	O	QSS intercarrier output / AM output / deemphasis / (front-end audio out)
40	Gnd2	-	GND
41	PllIf	-	IF-PLL loop filter
42	SifAgc	-	AGC sound IF
43	IfVo/FmRo/DvbO	O	Not used
44	NC	O	Not used
45	V8AudioSwitches	I	8V
46	AgcSsif	-	AGC capacitor second sound IF
47	V5P2	I	5V
48	V-OUT	O	Video output
49	L1	I	Audio-L1 input
50	R1	I	Audio-R1 input
51	V3	I	Video V3 input
52	C4	I	Not used
53	Audio2InL	I	Not used
54	Audio2InR	I	Not used
55	V2/Y	I	Video V2 input
56	L2	I	Audio L2 input (Left signal)
57	R2	I	Audio R2 input (right signal)
58	Y3/Cvbs	I	S-Video Y1 input
59	C1	I	S-Video C1 input
60	AudioLsL	O	Audio L output for audio power amplifier
61	AudioLsR	O	Audio R output for audio power amplifier
62	HP-L	O	Headphone L
63	HP-R	O	Headphone R

Pin no.	Pin name	I/O	Function
64	CVBSO/PIP	O	CVBS / PIP output
65	SVM	O	Scan velocity modulation output
66	FbiSo	I	Flyback input/sandcastle output
67	Hout	O	Horizontal output
68	VssComb	-	GND
69	V5Comb	I	5V
70	Vin/R2/Pr	I	PIP R input
71	Uin/B2/Pb	I	PIP B input
72	Yin/G2/Y	I	PIP G input
73	Ysync	I	Not used
74	Yout	O	Not used
75	Uout/INSSW2	I	YUV insertion input
76	NC	O	Not used
77	INSSW3	I	YUV insertion input
78	R3/Pr	I	Component PR input (Video-2)
79	G3/Y	I	Component Y input (Video-2)
80	B3/Pb	I	Component PB input (Video-2)
81	Gnd3	-	GND
82	V5P3	I	5V
83	BCL	I	Beam current limiter input
84	BLKIN	I	Black current input
85	Rout	O	R output
86	Gout	O	G output
87	Bout	O	B output
88	V3.3A1	I	3.3V
89	RefAdN	-	GND
90	V3.3RefAdP	I	3.3V (Positive)
91	RefAd	I	3.3/2V
92	GndA	-	GND
93	V1.8A	I	1.8V
94	V3.3A2	I	3.3V
95	VssADC	-	GND
96	V1.8ADC	I	1.8V
97	REMOTE	I	Remote control
98	PW_LED	I	POWER LED control
99	P11/TO	I	POWER LED control
100	V1.8C2	I	1.8V
101	VssC2	-	GND
102	COMPONENT-PIP	-	Not used
103	COMB_SW_NT3.5/OTHER	-	Not used
104	VER_PROTECT	O	X-ray protect
105	S_REDUCE	O	Sound control
106	P00/I2SDI1	O	Not used
107	POWER	O	SUB POWER control
108	SCL1	I	I2C bus clock
109	SDA1	I/O	I2C bus data
110	V3.3P	I	3.3V
111	ROTATION	O	ROTATION
112	3.58/OTHER	O	NTSC 3.58 detection
113	A_MUTE	O	Audio muting
114	4.5/OTHER	O	NTSC 4.43 detection
115	PROT	I	Protect
116	ECO_IN	I	ECO sensor level detection
117	V1.8C1	I	1.8V (Digital)
118	DecV1V8	I	1.8V
119	KEY_IN	I	Key scan data
120	VDO-DET	I	Video DET input
121	VSSC1+P1	-	Digital GND
122	P24/PWM3	I	S-Video DET input
123	P25/PWM4	O	GTVA_reset
124	V1.8C3	I	1.8V (Digital)
125	VssC3	-	GND
126	P12/Int2	I	External interrupt
127	SDA0	I/O	I2C bus data (for memory)
128	SCL0	I	I2C bus clock (for memory)

SECTION 3
DISASSEMBLY

3.1 DISASSEMBLY PROCEDURE

3.1.1 REMOVING THE REAR COVER

- Unplug the power cord.
  (1) Remove the 5 screws **[A]** and 2 screws **[B]** as shown in Fig.1.
  (2) Withdraw the REAR COVER toward you.

CAUTION:

When reinstalling the rear cover, carefully push it inward after inserting the MAIN PWB into the REAR COVER groove.

3.1.2 REMOVING THE MAIN PW BOARD

- Remove the REAR COVER.
  (1) Slightly raise the both sides of the MAIN PWB by hand.
  (2) Withdraw the MAIN PWB backward.
  (If necessary, take off the wire clamp and connectors, etc.)

3.1.3 REMOVING THE SPEAKER

- Remove the REAR COVER.
  (1) Remove the 2 screws **[C]** as shown in Fig.1.

3.1.4 CHECKING THE MAIN PW BOARD

- To check the back side of the MAIN PWB.
  (1) Pull out the MAIN PWB. (Refer to REMOVING THE MAIN PW BOARD).
  (2) Erect the MAIN PWB vertically so that you can easily check its back side.

CAUTIONS:

- Before turning on power, make sure that the CRT earth wire and other connectors are properly connected.
- When repairing, connect the DEG. COIL to the DEG. connector on the MAIN PWB.
- When repairing, connect the DEG. COIL to the DEG. connector on the MAIN PWB.

3.1.5 WIRE CLAMPING AND CABLE TYING

(1) Be sure to clamp the wire.
(2) Never remove the cable tie used for tying the wires together.
Should it be inadvertently removed, be sure to tie the wires with a new cable tie.

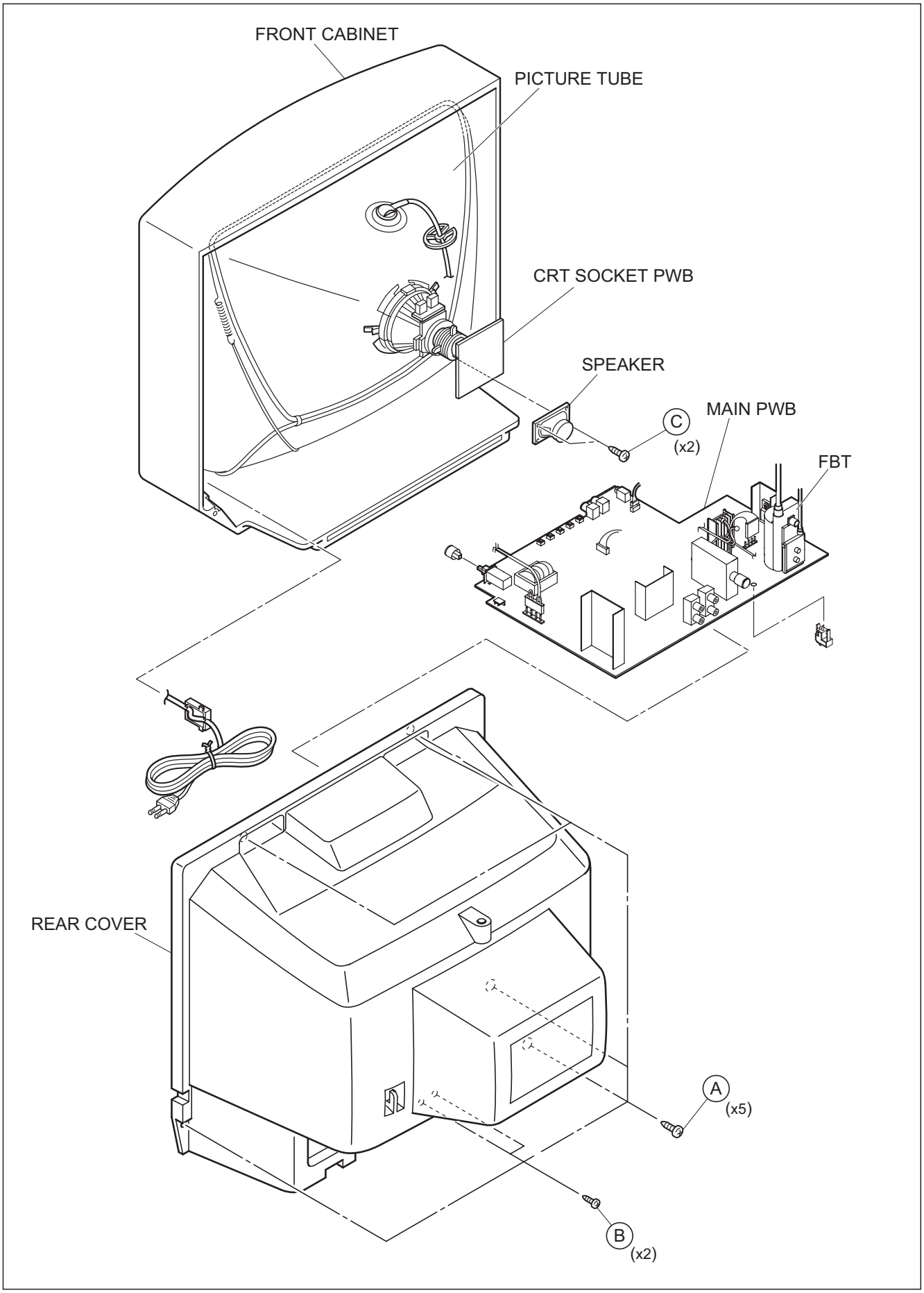

FRONT CABINET
PICTURE TUBE
CRT SOCKET PWB
SPEAKER
C
(x2)
MAIN PWB
FBT
REAR COVER
A
(x5)
B
(x2)

Fig.1

3.2 REPLACEMENT OF MEMORY IC

3.2.1 MEMORY IC

This TV uses the following memory IC.

Memory IC: IC702 on MAIN PWB

The memory IC memorizes data for correctly operating the video and deflection circuits. When replacing the memory IC, be sure to use the same type IC written with the initial values of data. In other words, use the specific IC listed in "PRINTED WIRING BOARD PARTS LIST". For its mounting location, refer to "ADJUSTMENT LOCATIONS".

3.2.2 PROCEDURE FOR REPLACING MEMORY IC

1. Power off

Switch the power off and unplug the power cord from the wall outlet.

2. Replacing the memory IC

Replace the memory IC with new one. Be sure to use the memory IC written with the initial data values.

3. Power on

Plug the power cord into the wall outlet and switch the power on.

4. Check and setting of SYSTEM CONSTANT SET:

(1) Press the [DISPLAY] key and the [PICTURE MODE] key on the remote control unit simultaneously.
The SERVICE MENU screen will be displayed.(See Fig.1.)

(2) In the SERVICE MENU, press the [DISPLAY] key and [PICTURE MODE] key simultaneously. Then, the SYSTEM CONSTANT SET screen will be displayed.(See Fig.2.)

(3) Check whether the setting values of the SYSTEM CONSTANT SET are the same as those indicated in Table 1.
If the value is different, select the setting item with the MENU [▲] / [▼] key, and set the correct value with the MENU [◀] / [▶] key.

(4) Press the [DISPLAY] key twice to return to the normal screen.

5. Receive channel setting

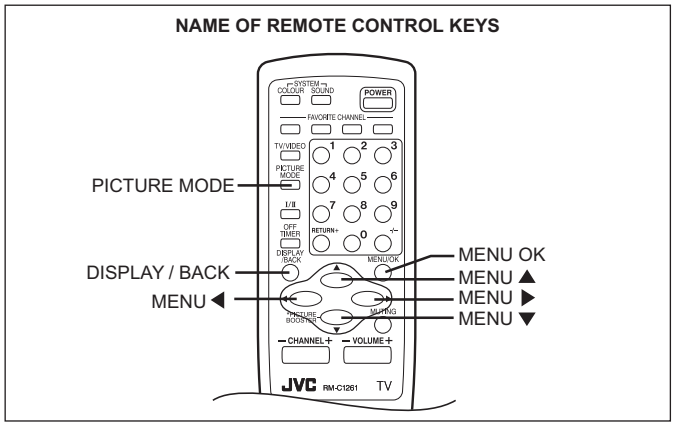
Refer to the **OPERATING INSTRUCTIONS** and set the receive channels (channels preset).

6. User setting

Check the user setting values in Table 2 and Table 3. If setting value is different, set the correct value.
For setting, refer to the **OPERATING INSTRUCTIONS**.

7. Setting of SERVICE MENU

Verify the setting for each setting item in the SERVICE MENU.(See Table 4.) If readjustment is necessary, perform adjustment referring to "ADJUSTMENTS PROCEDURE".



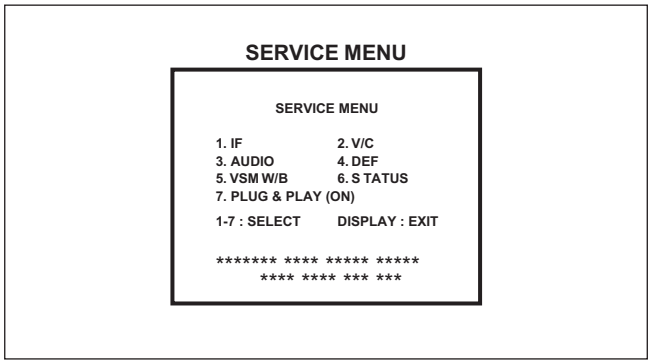


Fig.1

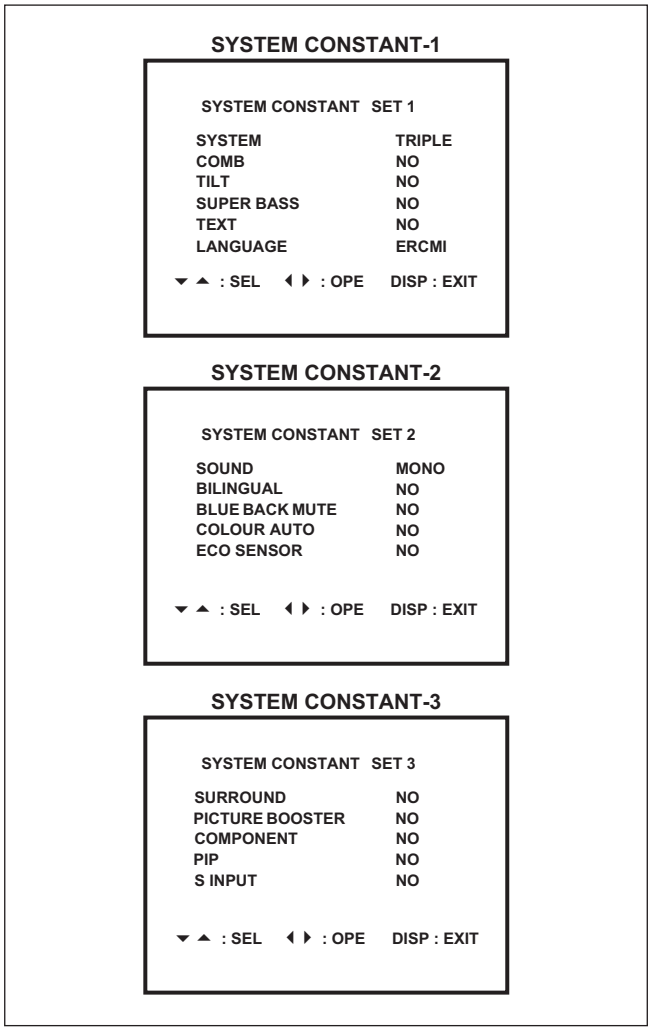


Fig.2

3.2.3 FACTORY SETTING VALUE

■ SETTING OF SYSTEM CONSTANT SET

Setting item	Setting content	Setting value
SYSTEM	MULTI↔TRIPLE↔PAL↔THAI	TRIPLE
COMB	YES ↔ NO	NO
TILT	YES ↔ NO	NO
SUPER BASS	YES ↔ NO	NO
TEXT	SINGLE ↔ NO ↔ PAT	NO
LANGUAGE	E/R/C/M/I ↔ E/C	E/R/C/M/I
SOUND	STEREO ↔ PB ↔ MONO	MONO
BILINGUAL	YES ↔ NO	NO
BLUE BACK MUTE	YES ↔ NO	NO
COLOUR AUTO	YES ↔ NO	NO
ECO SENSOR	YES ↔ NO	NO
SURROUND	YES ↔ NO	NO
PICTURE BOOSTER	YES ↔ NO	NO
COMPONENT	YES ↔ NO	NO
PIP	YES ↔ NO	NO
S INPUT	YES ↔ NO	NO

Table 1

■ **SETTING OF BASIC FUNCTIONS**

Setting item	Setting value
POWER	Off
SUB POWER	On
VOLUME	15
COLOR SYSTEM	PAL
SOUND SYSTEM	B/G
PICTURE MODE (VSM)	BRIGHT
OFF TIMER	OFF
CHANNEL POSITION	PR1

Table 2

■ **SETTING OF MENU SCREEN**

Setting item	Setting value
INPUT	TV
VNR	AUTO
AUTO SHUTOFF	OFF
CHILD LOCK	OFF
BLUE BACK	ON
AUTO PROGRAM	Refer to OPERATING INSTRUCTIONS
EDIT / MANUAL	Refer to OPERATING INSTRUCTIONS
LANGUAGE	ENG
WHITE BALANCE	COOL
TINT	Centre
COLOUR	Centre
BRIGHT	Centre
CONT	Maximum
SHARP	Centre
AI VOLUME	ON
FAVORITE CH RED	PR01
FAVORITE CH GREEN	PR02
FAVORITE CH YELLOW	PR03
FAVORITE CH BLUE	PR04

Table 3

■ **SERVICE MENU SETTING ITEMS**

Setting item	Setting value
1. IF	1. VCO 2. DELAY POINT
2. V/C	1. SCREEN DATA 2. CUTOFF(B/G) 3. WDR(R/G/B) 4. BRIGHT(TV/VDO 1/2) 5. CONT(TV/VDO 1/2) 6. COLOUR(TV/VDO1/2) 7. TINT(TV/VDO 1/2) 8. SHARP [Do not adjust] 9. Y DELAY [Do not adjust] 10. TINT DVD [Do not adjust] 11. AMP T. SHARP
3. AUDIO **[Do not adjust]**	1. DCXO ADJ 2. NICAM lower ERRLIM 3. NICAM upper ERRLIM 4. A2 ID THR 5. MENU EQUALIZER
4. DEF	1. V-SHIFT 2. V-SLOPE 3. V-SIZE 4. H-CENT 5. H-SIZE 6. TRAPEZ 7. EW-PIN 8. COR-UP 9. COR-LO 10. ANGLE 11. BOW 12. V-S.CR 13. V-LIN 14. V-ZOOM 15. V-SCROLL
5. VSM W/B **(BRIGHT/STANDARD/SOFT)** **(COOL/WARM/NORMAL)**	1. BRIGHT 2. CONT 3. COLOUR 4. SHARP 5. HUE 1. R DRIVE 2. G DRIVE 3. B DRIVE
6. STATUS **[Display only]**	
7. PLUG & PLAY(ON) **[Display only]**	

Table 4

3.3 REPLACEMENT OF CHIP COMPONENT

3.3.1 CAUTIONS

(1) Avoid heating for more than 3 seconds.
(2) Do not rub the electrodes and the resist parts of the pattern.
(3) When removing a chip part, melt the solder adequately.
(4) Do not reuse a chip part after removing it.

3.3.2 SOLDERING IRON

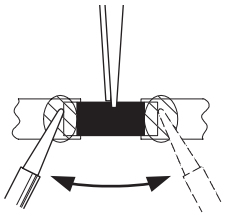
(1) Use a high insulation soldering iron with a thin pointed end of it.
(2) A 30w soldering iron is recommended for easily removing parts.

3.3.3 REPLACEMENT STEPS

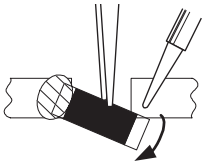
1. How to remove Chip parts

[Resistors, capacitors, etc.]

(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.



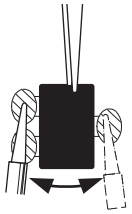
(2) Shift with the tweezers and remove the chip part.



[Transistors, diodes, variable resistors, etc.]

(1) Apply extra solder to each lead.

(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.



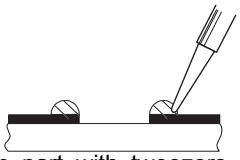
NOTE :

After removing the part, remove remaining solder from the pattern.

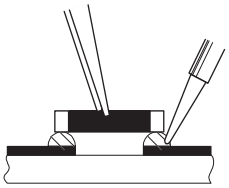
2. How to install Chip parts

[Resistors, capacitors, etc.]

(1) Apply solder to the pattern as indicated in the figure.

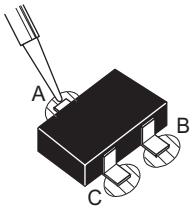


(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

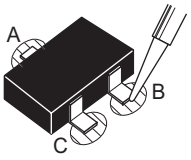


[Transistors, diodes, variable resistors, etc.]

(1) Apply solder to the pattern as indicated in the figure.
(2) Grasp the chip part with tweezers and place it on the solder.
(3) First solder lead **A** as indicated in the figure.



(4) Then solder leads **B** and **C**.



SECTION 4
ADJUSTMENT

4.1 ADJUSTMENT PREPARATION

(1) **You can make the necessary adjustments for this unit with either the remote control unit or with the adjustment equipment and parts as given below.**
(2) **Adjustment with the remote control unit is made on the basis of the initial setting values, however, the new setting values used for setting the screen to its optimum condition may differ from the initial settings.**
(3) Make sure that AC power is turned on correctly.
(4) Turn on the power for the set and test equipment before use, and start the adjustment procedures after waiting at least 30 minutes.
(5) Unless otherwise specified, prepare the most suitable reception or input signal for adjustment.
(6) Never touch any adjustment parts, which are not specified in the list for this variable resistors, transformers, trimmer capacitors, etc.

4.2 PRESETTING BEFORE ADJUSTMENT

Unless otherwise specified in the adjustment instructions, preset the following functions with the remote control unit.

■ **User mode setting position**

Setting item	Setting value
PICTURE MODE (VSM)	BRIGHT
TINT, COLOUR, BRIGHT,SHARP	Centre
CONT	Maximum
VNR	OFF

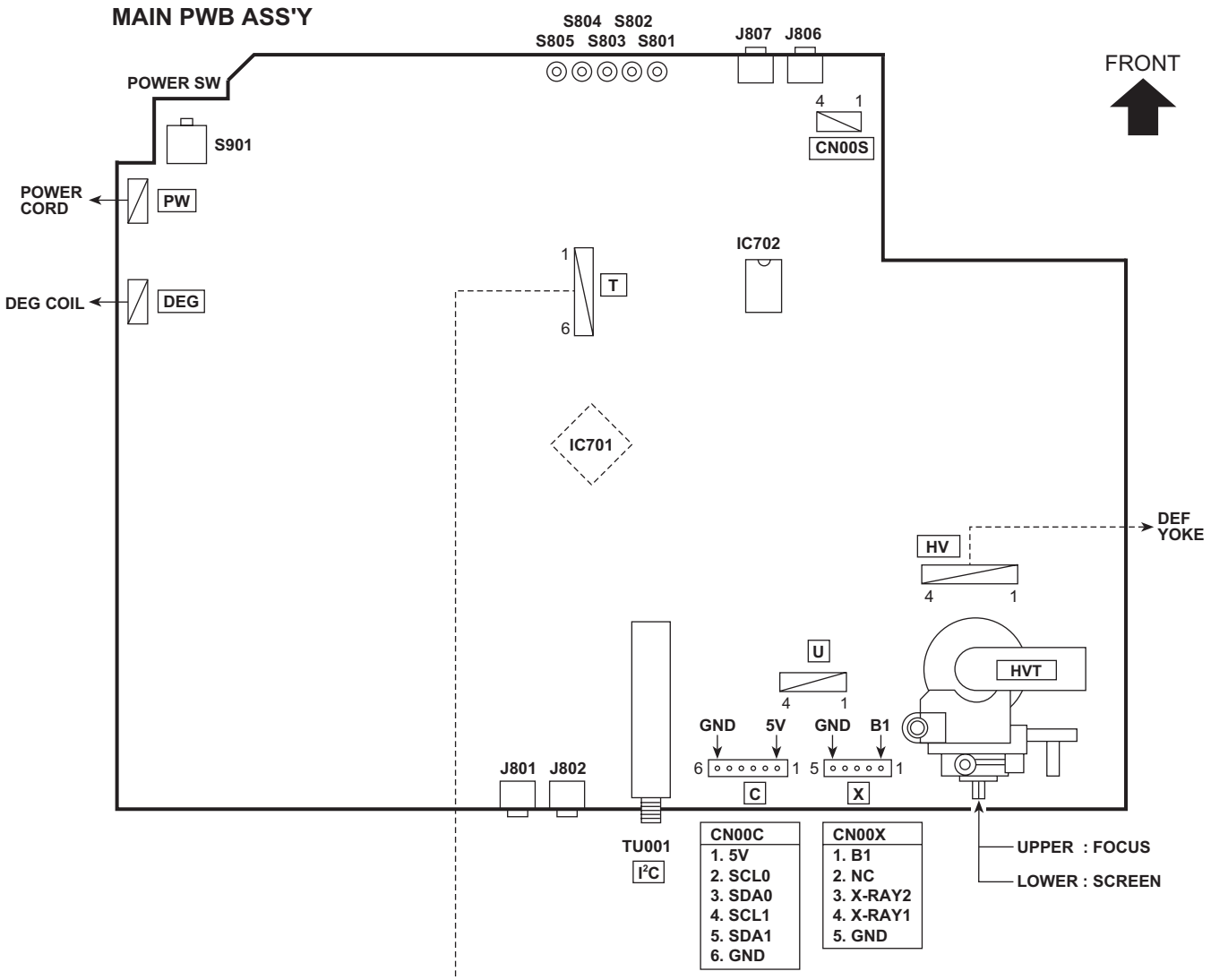
4.3 MEASURING INSTRUMENT AND FIXTURES

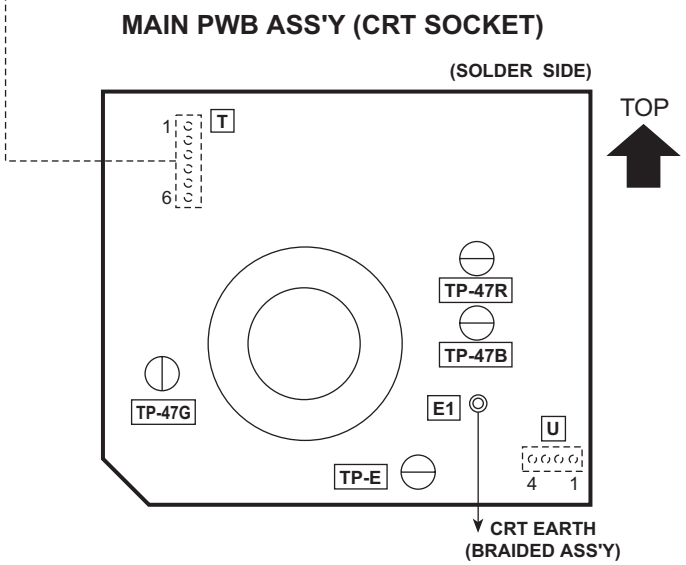
(1) DC voltmeter (or Digital voltmeter)
(2) Oscilloscope
(3) Signal generator (Pattern generator) [PAL/SECAM/NTSC]
(4) Remote control unit

4.4 ADJUSTMENT ITEMS

■ B1 VOLTAGE
■ FOCUS ADJUSTMENT
■ IF CIRCUIT ADJUSTMENTS
• IF VCO adjustment
• DELAY POINT (AGC TAKE-OVER) adjustment
■ VIDEO CIRCUIT ADJUSTMENTS
• WHITE BALANCE (Low light) adjustment
• WHITE BALANCE (High light) adjustment
• SUB BRIGHT adjustment
• SUB CONTRAST adjustment
• SUB COLOUR 1 adjustment
• SUB COLOUR 2 adjustment
• SUB TINT 1 adjustment
• SUB TINT 2 adjustment
■ DEFLECTION CIRCUIT ADJUSTMENTS
• V.SLOPE adjustment
• V.POSITION adjustment
• V.HEIGHT adjustment
• H.POSITION adjustment
• V. LINEARITY adjustment
• H. PARALLEL adjustment
• H.BOW adjustment
■ VSM PRESET SETTING

4.5 ADJUSTMENT LOCATIONS





4.6 BASIC OPERATION IN SERVICE MENU

Operate the SERVICE MENU with the remote control unit.

4.6.1 SERVICE MENU ITEMS

With the SERVICE MENU, various settings (adjustments) can be made, and they are broadly classified in the following items of settings:

1. IF	For entering/adjusting the setting values (adjustment values) of the IF circuit.
2. V/C	For entering/adjusting the setting values (adjustment values) of the VIDEO circuit.
3. AUDIO	For entering/adjusting the setting values (adjustment values) of the AUDIO circuit.
4. DEF	For entering/adjusting the setting values (adjustment values) of the DEFLECTION circuit.
5. VSM W/B	For setting the values of STANDARD, SOFT, BRIGHT and COOL, NORMAL, WARM.
6. STATUS	This is not used for service.
7. PLUG & PLAY (ON)	This is not used for service.

4.6.2 BASIC OPERATION IN SERVICE MENU

1. HOW TO ENTER SERVICE MENU

Press the [DISPLAY] key and the [PICTURE MODE] key on the remote control unit simultaneously.
The SERVICE MENU screen will be displayed. (See Fig. 1 on the next page.)

2. SELECTION OF SUB MENU SCREEN

Press one of the keys 1 to 6 on the remote control unit, and select the SUB MENU SCREEN from the SERVICE MENU. (See Fig.1 on the next page.)
SERVICE MENU → SUB MENU

1. IF
2. V/C
3. AUDIO
4. DEF
5. VSM W/B
6. STATUS
7. PLUG & PLAY (ON)

3. METHOD OF SETTING

NOTES:

- Once the setting values are set, they are memorized automatically.
- It must not be adjusted without inputting a signal.

(1) 1. IF

[1.VCO] : Under normal conditions, no adjustment is required.

(a) [1] key	Select **1. IF**.
(b) [1] key	Select **1. VCO**.
(c) [DISPLAY] key	When this is pressed twice, you will return to the SERVICE MENU.

[2.DELAY POINT]

(a) [1] key	Select **1. IF**.
(b) [2] key	Select **2. DELAY POINT**.
(c) MENU [◂] / [▸] key	Adjust the setting value.
(d) [DISPLAY] key	When this is pressed twice, you will return to the SERVICE MENU.

(2) 2. V/C, 3. AUDIO and 4. DEF

(a) [2] ~[4] keys	Select one from **2. V/C**, **3. AUDIO** and **4. DEF**
(b) MENU [▴] / [▾] key	Select setting items.
(c) MENU [◂] / [▸] key	Adjust the setting values of the setting items. Use the number keys on the remote control unit for setting the WHITE BALANCE. For the setting, refer to each item concerned.
(d) [DISPLAY] key	When this is pressed, you will return to the SERVICE MENU.

(3) 5. VSM W/B

(a) [5] keys	Select **5. VSM W/B**.
(b) MENU [OK] key	Select preset items.
(c) MENU [▴] / [▾] key	Adjust setting items.
(d) MENU [◂] / [▸] key	Adjust the setting values of the setting items.
(e) [DISPLAY] key	When this is pressed, you will return to the SERVICE MENU.

(4) 6. STATUS

This is for display only.

(5) 7. PLUG & PLAY (ON)

This is not used for service.

4. Release of SERVICE MENU

After completing the setting, return to the SERVICE MENU by pressing the [DISPLAY] key, then again press the [DISPLAY] key to return to the normal screen.

4.6.3 SERVICE MENU FLOW CHART

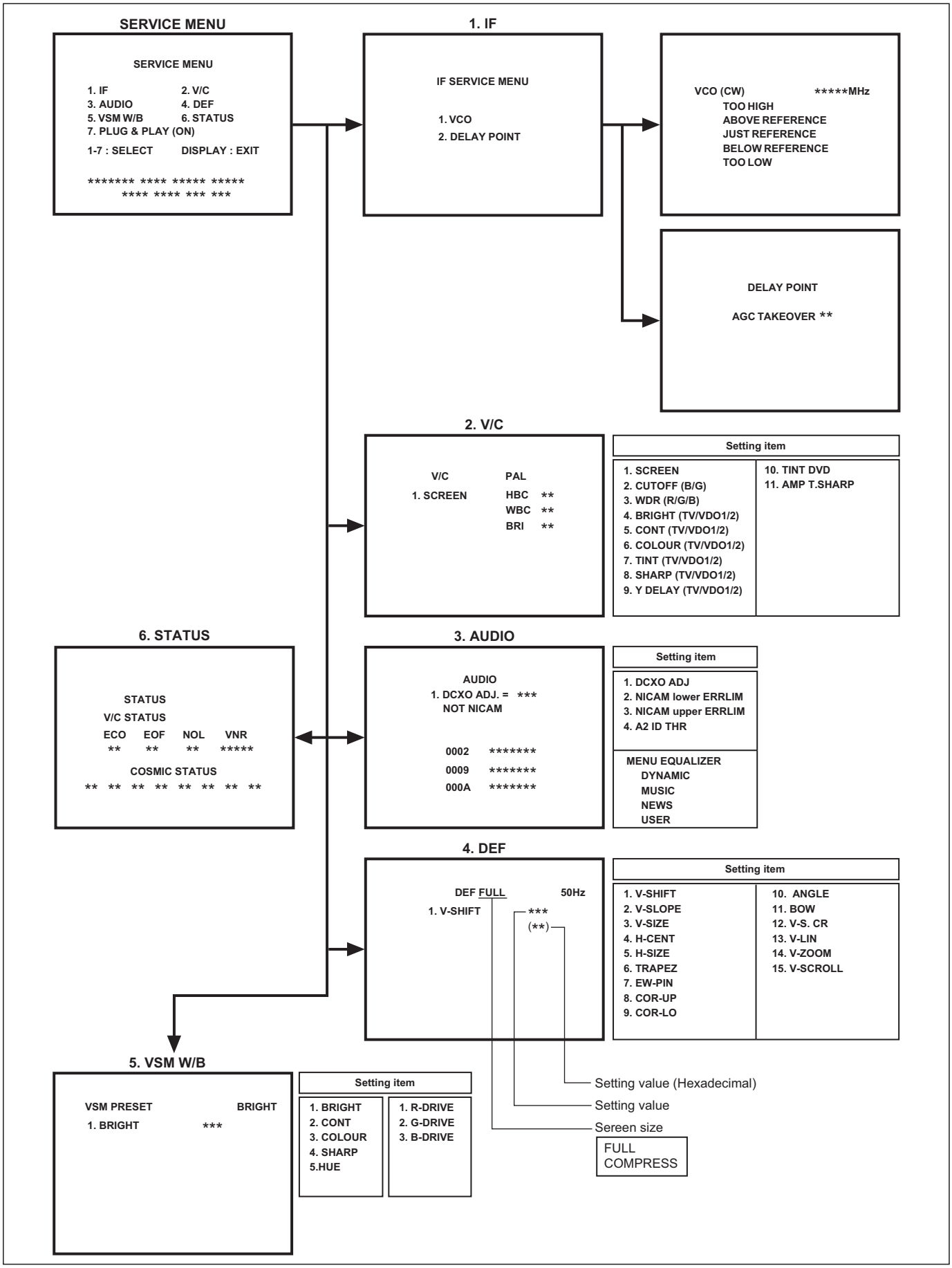


Fig.1

4.7 ADJUSTMENT PROCEDURE

4.7.1 B1 VOLTAGE

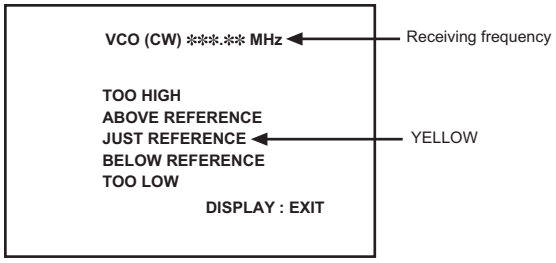
Item	Measuring instrument	Test point	Adjustment part	Description
B1 VOLTAGE check	Signal generator DC voltmeter	B1 (pin 1) GND (pin 5) [CN00X connector in MAIN PWB]		(1) Receive a black and white signal. (2) Connect a DC voltmeter between B1 and GND (between pins 1 and 5 of the connector CN00X). (3) Make sure that the voltage is **DC117.5V** ± **3V**.

4.7.2 FOCUS ADJUSTMENT

Item	Measuring instrument	Test point	Adjustment part	Description
FOCUS adjustment	Signal generator		FOCUS VR [In HVT]	**Notes:** • Set PICTURE MODE (VSM) to "BRIGHT". • The final adjustment of CONVERGENCE must be done after the FOCUS adjustment. (CONVERGENCE is affected by the FOCUS adjustment.) If any aeviation in CONVERGENCE is found, PURITY must be adjusted to restore the convergence. (1) Receive a crosshatch signal. (2) Adjust the **FOCUS VR** so that the vertical and horizontal lines will be clear and in fine detail on the screen. (3) Make sure that the picture is in focus even when the screen gets darkened.

4.7.3 IF CIRCUIT ADJUSTMENTS

Item	Measuring instrument	Test point	Adjustment part	Description
IF VCO check	Remote control unit		[1. IF] 1. VCO (CW)	**Note:** • Under normal conditions, no adjustment is required. (1) Receive a broadcast signal. (2) Select **1. IF** from the SERVICE MENU. (3) Select **1. VCO**. (4) Check the characters colour of the **JUST REFERENCE** displayed to **yellow**. (5) Press the [DISPLAY] key three times to return to normal screen.
DELAY POINT (AGC TAKE-OVER) adjustment	Remote control unit		[1. IF] 2. DELAY POINT	(1) Receive a black and white broadcast signal (colour off). (2) Select **1. IF** from the SERVICE MENU. (3) Select **2. DELAY POINT**. (4) Adjust in order to eliminate any noise or beat from the image. Any increase above the initial value produces the noise and any decrease below it produces the beat. (5) Press the [DISPLAY] key three times to return to the normal screen. (6) Turn to other channels and make sure that there are no irregularities.



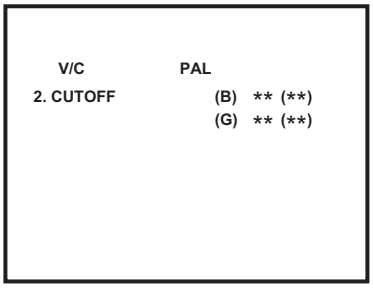
Adjustment item	Initial setting value	
	VHF	UHF
2. DELAY POINT (AGC TAKE-OVER)	33	33

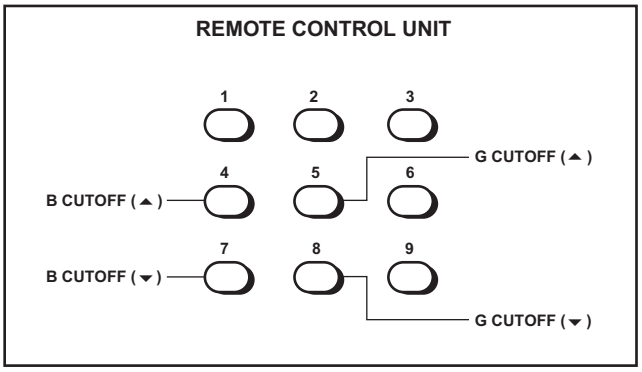
4.7.4 VIDEO CIRCUIT ADJUSTMENTS

- The setting (adjustment) using the remote control unit is made on the basis of the initial setting values.
- The setting values which adjust the screen to the optimum condition can be different from the initial setting values.
- Do not change the initial setting values of the setting (adjustment) items not listed in "ADJUSTMENT PROCEDURE".
- The initial setting values in parenthesis ( ) are fixed offset values, needing no further adjustment.

Adjustment item		Variable range	Initial setting value			
			PAL	SECAM	NTSC3.58	NTSC4.43
1. SCREEN	BRI	0 ~ 63	32	32	32	32
2. CUTOFF	B	0 ~ 63	11	11	11	11
	G	0 ~ 63	7	7	7	7
3. WDR	R	0 ~ 63	32	32	32	32
	G	0 ~ 63	32	32	32	32
	B	0 ~ 63	45	45	45	45
4. BRIGHT	RF	0 ~ 63	39	39	---	---
	VIDEO 1	(-32 ~ +31)	(+4)	(+4)	(+4)	(+4)
	VIDEO 2	(-32 ~ +31)	(+4)	(+4)	(+4)	(+4)
5. CONT.	RF	0 ~ 63	32	32	---	---
	VIDEO	(-32 ~ +31)	(+2)	(+2)	(+2)	(+2)
6. COLOUR	RF	0 ~ 63(-32 ~ +31)	42	32	---	---
	VIDEO	(-32 ~ +31)	(+3)	(+3)	(+7)	(+2)
7. TINT	RF	0 ~ 63(-32 ~ +31)	---	---	---	---
	VIDEO	(-32 ~ +31)	---	---	(+5)	(+4)
8. SHARP	RF	0 ~ 63	48	48	48	48
	VIDEO	0 ~ 63	48	48	48	48
9. Y DELAY	RF	0 ~ 15	5	5	---	---
	VIDEO	0 ~ 15	5	5	5	5
10. TINT DVD	VIDEO	0 ~ 63	34	33	33	33
11. AMP T.SHARP	RF, VIDEO	0 ~ 63	0	0	0	0

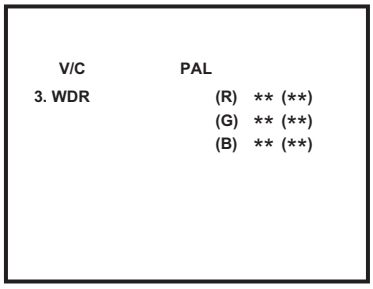
Item	Measuring instrument	Test point	Adjustment part	Description
WHITE BALANCE (Low light) adjustment	Signal generator Remote control unit		[2. V/C] 2. CUTOFF (B) 2. CUTOFF (G) SCREEN VR [In HVT]	**Note:** • Set PICTURE MODE (VSM) to "BRIGHT". (1) Receive a PAL black and white signal (colour off). (2) Select **2. V/C** from the SERVICE MENU. (3) Select **2. CUTOFF (B)** and **(G)**. (4) Set each value to initial setting value with the **[4]** / **[7]** keys and **[5]** / **[8]** keys. (5) Turn the **SCREEN VR** fully counterclockwise, then slowly turn it clockwise to where a red, blue or green colour is faintly visible. (6) Use the **[4]** / **[7]** and **[5]** / **[8]** keys to adjust so that the other 2 colours appear white. (7) Turn the **SCREEN VR** to where the single horizontal line glows faintly. (8) Press the **[2]** key to return to **2. CUTOFF** screen. (9) Press the [DISPLAY] key twice to return to the normal screen.

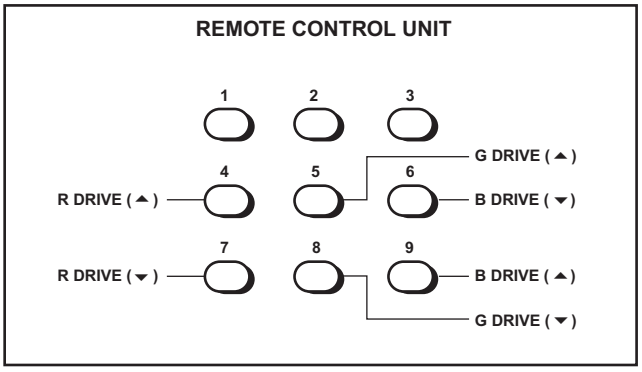




Adjustment Item		Variable range	Initial setting value
2. CUTOFF	B	0 ~ 63	11
	G	0 ~ 63	7

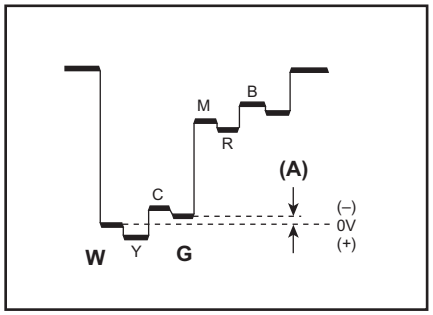
WHITE BALANCE (High light) adjustment	Signal generator Remote control unit		[2. V/C] 3. WDR (R) 3. WDR (G) 3. WDR (B)	**Notes:** • Proceed to the following adjustment after having completed the WHITE BALANCE (Low light) adjustment. • Set PICTURE MODE (VSM) to "BRIGHT". (1) Receive a PAL black and white signal (colour off). (2) Select **2. V/C** from the SERVICE MENU. (3) Select **3. WDR (R)**, **(G)** and **(B)**. (4) Set each value to initial setting value with the **[4]** to **[9]** keys. (5) Use the **[4]** to **[9]** keys to produce a white screen. (6) Press the [DISPLAY] key twice to return to the normal screen.



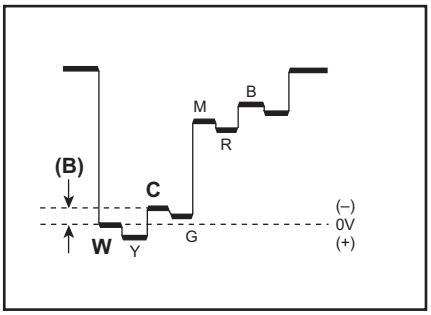


Adjustment Item		Variable range	Initial setting value
3. WDR	R	0 ~ 63	32*
	G	0 ~ 63	32
	B	0 ~ 63	45*

Item	Measuring instrument	Test point	Adjustment part	Description
SUB BRIGHT adjustment	Remote control unit		[2. V/C] 4. BRIGHT	**Notes:** • Proceed to the following adjustment after having completed the WHITE BALANCE (Low light) and WHITE BALANCE (High light) adjustment. • Set PICTURE MODE (VSM) to "BRIGHT". (1) Receive a broadcast. (2) Select **2. V/C** from the SERVICE MENU. (3) Select **4. BRIGHT**. (4) Set the initial setting value. (5) If the brightness is not best with the initial setting value, make fine adjustment until you get the best brightness. (6) Press the [DISPLAY] key twice to return to the normal screen.
SUB CONTRAST adjustment	Remote control unit		[2. V/C] 5. CONT	**Notes:** • Proceed to the following adjustment after having completed the SUB BRIGHT adjustment. • Set PICTURE MODE (VSM) to "BRIGHT". (1) Receive a broadcast. (2) Select **2. V/C** from the SERVICE MENU. (3) Select **5. CONT**. (4) Set the initial setting value. (5) If the contrast is not best with the initial setting value, make fine adjustment until you get the best contrast. (6) Press the [DISPLAY] key twice to return to the normal screen.
SUB COLOUR 1 adjustment	Remote control unit		[2. V/C] 6. COLOUR	**[Method of adjustment without measuring instrument]** **Notes:** • Proceed to the following adjustment after having completed the SUB CONTRAST adjustment. • Set PICTURE MODE (VSM) to "BRIGHT". **- PAL COLOUR -** (1) Receive a PAL broadcast. (2) Select **2. V/C** from the SERVICE MENU. (3) Select **6. COLOUR**. (4) Set the initial setting value for PAL COLOUR. (5) If the colour is not best with the initial setting value, adjust until you get the best colour. (6) Press the [DISPLAY] key twice to return to the normal screen. **- SECAM COLOUR -** (1) Receive a SECAM broadcast. (2) Press the [COLOUR SYSTEM] key to select the SECAM colour system. (3) Adjust SECAM COLOUR in the same way as for "PAL COLOUR". **- NTSC 3.58 COLOUR -** (1) Input a NTSC 3.58MHz broadcast. (2) Press the [COLOUR SYSTEM] key to select the NTSC 3.58 colour system. (3) Adjust NTSC 3.58 COLOUR in the same way as for "PAL COLOUR". **- NTSC 4.43 COLOUR -** When adjustment is done for NTSC 3.58 COLOUR, appropriate values are automatically set for NTSC 4.43 COLOUR.

Item	Measuring instrument	Test point	Adjustment part	Description
SUB COLOUR 2 adjustment	Signal generator Oscilloscope Remote control unit	TP-47G TP-E [CRT SOCKET PWB]	[2. V/C] 6. COLOUR	**[Method of adjustment using measuring instrument]** **Notes:** • Proceed to the following adjustment after having completed the SUB CONTRAST adjustment. • Set PICTURE MODE (VSM) to "BRIGHT". **- PAL COLOUR -** (1) Receive a PAL colour bar signal (full field colour bar 75% white). (2) Select **2. V/C** from the SERVICE MENU. (3) Select **6. COLOUR**. (4) Set the initial setting value of PAL COLOUR. (5) Connect the oscilloscope between TP-47G and TP-E. (6) Adjust PAL COLOUR to set the value **(A)** in the figure to **+13V**. **- SECAM COLOUR -** (1) Receive a SECAM colour bar signal (colour bar 75% white). (2) Press the [COLOUR SYSTEM] key to select the SECAM colour system. (3) Set the initial setting value of SECAM COLOUR. (4) Adjust SECAM COLOUR to set the value **(A)** in the figure to **+3V**. **- NTSC 3.58 COLOUR -** (1) Input a NTSC 3.58 colour bar signal (full field colour bar 75% white). (2) Press the [COLOUR SYSTEM] key to select the NTSC 3.58 colour system. (3) Set the initial setting value of NTSC 3.58 COLOUR. (4) Adjust NTSC 3.58 COLOUR to set the value **(A)** in the figure to **+3V**. **- NTSC 4.43 COLOUR -** When adjustment is done for NTSC 3.58 COLOUR, appropriate values are automatically set for NTSC 4.43 COLOUR.
				
SUB TINT 1 adjustment	Signal generator Remote control unit		[2. V/C] 7. TINT	**[Method of adjustment without measuring instrument]** **Notes:** • Proceed to the following adjustment after having completed the SUB CONTRAST adjustment. • Set PICTURE MODE (VSM) to "BRIGHT". **- NTSC 3.58 TINT -** (1) Input a NTSC 3.58 colour bar signal (full field colour bar 75% white). (2) Press the [COLOUR SYSTEM] key to select the NTSC 3.58 colour system. (3) Select **2. V/C** from the SERVICE MENU. (4) Select **7. TINT**. (5) Set the initial setting value of NTSC 3.58. (6) If you cannot get the best tint with the initial setting value, make fine adjustment until you get the best tint. (7) Press the [DISPLAY] key twice to return to the normal screen. **- NTSC 4.43 TINT -** When adjustment is done for NTSC 3.58 TINT, appropriate values are automatically set for NTSC 4.43 TINT.

Item	Measuring instrument	Test point	Adjustment part	Description
SUB TINT 2 adjustment	Signal generator Oscilloscope Remote control unit	TP-47G TP-E [CRT SOCKET PWB]	[2. V/C] 7. TINT	**[Method of adjustment using measuring instrument]** **Notes:** • Proceed to the following adjustment after having completed the SUB CONTRAST adjustment. • Set PICTURE MODE (VSM) to "BRIGHT". **- NTSC 3.58 TINT -** (1) Input a NTSC 3.58 colour bar signal (full field colour bar 75% white). (2) Press the [COLOUR SYSTEM] key to select the NTSC 3.58 colour system. (3) Select **2. V/C** from the SERVICE MENU. (4) Select **7. TINT**. (5) Set the initial setting value of NTSC 3.58. (6) Connect the oscilloscope between TP-47G and TP-E. (7) Adjust NTSC 3.58 TINT to set the value **(B)** in the figure to **+3V**. (8) Press the [DISPLAY] key twice to return to the normal screen. **- NTSC 4.43 TINT -** When adjustment is done for NTSC 3.58 TINT, appropriate values are automatically set for NTSC 4.43 TINT.



4.7.5 DEFLECTION CIRCUIT ADJUSTMENTS

- The setting (adjustment) using the remote control unit is made on the basis of the initial setting values.
- The setting values which adjust the screen to the optimum condition can be different from the initial setting values.
- When performing deflection circuit adjustment, adjusts PAL signal (fv: 50 Hz) in 4:3 mode, and adjust the NTSC signal (fv: 60 Hz) similarly.

Note:

Proceed to the following adjustment after having completed the adjustments of SUB BRIGHT and SUB PICTURE.

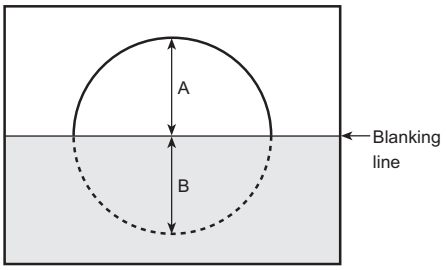
■ **4. DEF**

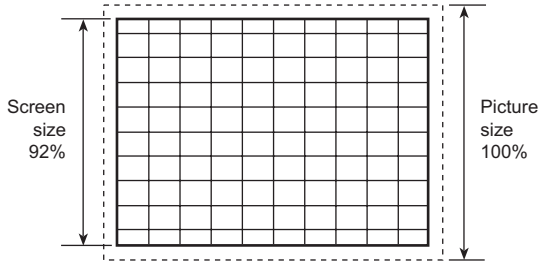
Adjustment item	Variable range		Initial setting value	
	4:3 50Hz	60Hz	4:3	
			50Hz	60Hz
1. V-SHIFT	0 ~ 63	-32 ~ +31	0	0
2. V-SLOPE	0 ~ 63	-32 ~ +31	+32*	0*
3. V-SIZE	0 ~ 63	-32 ~ +31	+38*	0*
4. H-CENT	0 ~ 63	-32 ~ +31	+32*	0*
5. H-SIZE	0 ~ 63	-32 ~ +31	0	0
6. TRAPEZ	0 ~ 63	-32 ~ +31	0	0
7. EW-PIN	0 ~ 63	-32 ~ +31	0	0
8. COR-UP	0 ~ 63	-32 ~ +31	0	0
9. COR-LO	0 ~ 63	-32 ~ +31	0	0
10. ANGLE	0 ~ 63	-32 ~ +31	+32*	0*
11. BOW	0 ~ 63	-32 ~ +31	+32*	0*
12. V-S.CR	0 ~ 63	-32 ~ +31	+32*	0*
13. V-LIN	0 ~ 63	-32 ~ +31	+32*	0*
14. V-ZOOM	0 ~ 63	-32 ~ +31	(+30)	(0)
15. V-SCROLL	0 ~ 63	-32 ~ +31	(+32)	(0)

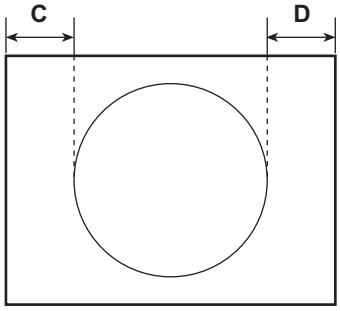
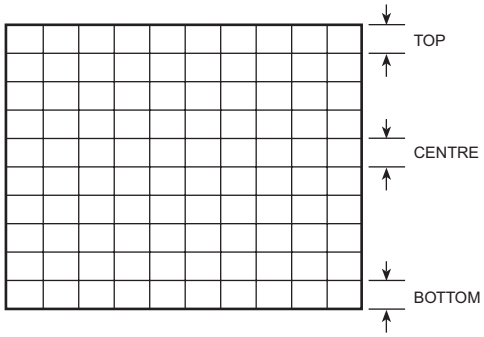
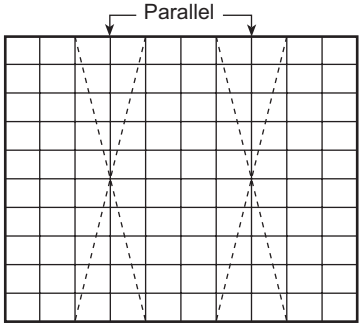
NOTE: The value with an asterisk * is variable for adjustment. The values in parenthesis ( ) are fixed values.

■ **COMPRESS: OFF (4:3)**

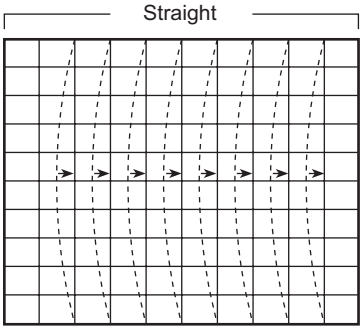
<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>V. SLOPE adjustment</td><td>Signal generator

Remote control unit</td><td></td><td>[4. DEF]
2. V-SLOPE</td><td rowspan="2">- PAL V. SLOPE -
(1) Receive a PAL circle pattern signal of vertical frequency 50Hz.
(2) Select 4. DEF from the SERVICE MENU.
(3) Select 2. V-SLOPE.
(4) Set the initial setting value of 2. V-SLOPE.
(5) Adjust 2. V-SLOPE to make "A = B".
(6) Press the [DISPLAY] key twice to return to SERVICE MENU screen.
- NTSC V. SLOPE -
(1) Input a NTSC circle pattern signal of vertical frequency 60Hz.
(2) Make similar adjustment of NTSC V-SLOPE in the same way as for "PAL V-SLOPE".</td></tr>
<tr><td colspan="4"> 
</td></tr>
<tr><td>V. HEIGHT adjustment</td><td>Signal generator

Remote control unit</td><td></td><td>[4. DEF]
3. V-SIZE
14. V-ZOOM</td><td rowspan="2">- PAL V. HEIGHT -
(1) Receive a PAL crosshatch signal.
(2) Select 3. V-SIZE.
(3) Set the initial setting value of 3. V-SIZE.
(4) Select 14. V-ZOOM.
(5) Set the initial setting value of 14. V-ZOOM.
(6) Adjust 14. V-ZOOM to make the vertical screen size to 92% of the picture size.
- NTSC V. HEIGHT -
(1) Input a NTSC crosshatch signal.
(2) Make similar adjustment of NTSC V. HEIGHT in the same way as for "PAL V. HEIGHT".</td></tr>
<tr><td colspan="4"> 
</td></tr>
</table>

Item	Measuring instrument	Test point	Adjustment part	Description
H. POSITION adjustment	Signal generator Remote control unit		[4. DEF] 4. H-CENT	**- PAL H. POSITION -** (1) Receive a PAL circle pattern signal. (2) Select **4. H-CENT**. (3) Set the initial setting value of **4. H-CENT**. (4) Adjust **4. H-CENT** to make "**C = D**". **- NTSC H. POSITION -** (1) Input a NTSC circle pattern signal. (2) Make similar adjustment of NTSC H. POSITION in the same way as for "PAL H. POSITION".
				
V.LINEARITY adjustment	Signal generator Remote control unit		[4. DEF] 12. V-S. CR 13. V-LIN	**- PAL V. LINEARITY -** (1) Receive a PAL crosshatch signal. (2) Select **12. V-S.CR**. (3) Set the initial setting value of **12. V-S. CR**. (4) Select **13. V-LIN**. (5) Set the initial setting value of **13. V-LIN**. (6) Adjust **12. V-S. CR** and **13. V-LIN** so that the spaces of each line on TOP, CENTRE and BOTTOM become uniform. **- NTSC V. LINEARITY -** (1) Input a NTSC crosshatch signal. (2) Make similar adjustment of NTSC V-S. CR in the same way as for "PAL V-S. CR".
				
H. PARALLEL adjustment	Signal generator Remote control unit		[4.DEF] 10. ANGLE	**- PAL H. PARALLEL -** (1) Receive a PAL crosshatch signal. (2) Select **10. ANGLE**. (3) Set the initial setting value of **10. ANGLE**. (4) Adjust **10. ANGLE** to optimize the trapezium distortion at the centre of the screen. **- NTSC H. PARALLEL -** (1) Input a NTSC crosshatch signal. (2) Make similar adjustment of NTSC H. PARALLEL in the same way as for "PAL H. PARALLEL".
				

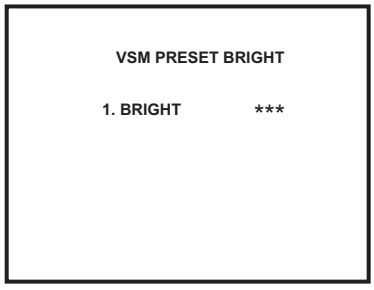
Item	Measuring instrument	Test point	Adjustment part	Description
H. BOW adjustment	Signal generator Remote control unit		[4.DEF] 11. BOW	**- PAL H. BOW -** (1) Receive a PAL crosshatch signal. (2) Select **11. BOW**. (3) Set the initial setting value of **11. BOW**. (4) Adjust **11. BOW** to optimize the horizontal arc distortion. **- NTSC H. BOW -** (1) Input a NTSC crosshatch signal. (2) Make similar adjustment of NTSC H. BOW in the same way as for "PAL H. BOW". (3) Press the [DISPLAY] key twice to return to the normal screen.



4.7.6 VSM PRESET SETTING

Item	Measuring instrument	Test point	Adjustment part	Description
VSM PRESET setting	Remote control unit		[5. VSM W/B] 1. BRIGHT 2. CONT 3.COLOUR 4. SHARP 5. HUE 1. R-DRIVE 2. G-DRIVE 3. B-DRIVE	(1) Select **5. VSM W/B** from the SERVICE MENU. (2) Select BRIGHT with the MENU [OK] key. (3) Set the value of **1. BRIGHT ~ 5. HUE** to the values shown in the table. (4) Respectively select the VSM PRESET mode for SOFT and STANDARD. (5) Select COOL with the MENU [OK] key. (6) Set the values of **1. R-DRIVE ~ 3. B-DRIVE** to the value shown in the table. (7) Select the W/B preset for WARM and NORMAL, respectively. (8) Press the [DISPLAY] key twice to return to the normal screen.

SUB MENU 5. VSM W/B



[Setting Values for SUB 5. VSM W/B]

VSM preset / Setting item	BRIGHT	STANDARD	SOFT
1. BRIGHT	0	+4	+4
2. CONT	+15	+4	+1
3. COLOUR	0	0	0
4. SHARP	0	0	-10
5. HUE	0	0	0
W/B preset / Setting item	**COOL**	**NORMAL**	**WARM**
1. R-DRIVE	0	0	+10
2. G-DRIVE	0	+2	-4
3. B-DRIVE	0	-10	-12

SECTION 5
TROUBLESHOOTING

5.1 SELF CHECK FUNCTIONS

5.1.1 OUTLINE

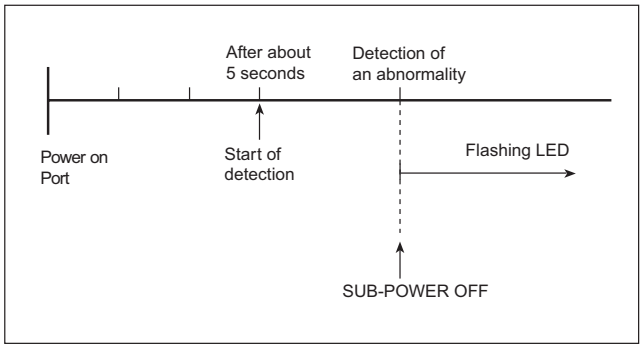
This model has self check functions given below. When an abnormality has been detected, the SUB POWER is turned off and POWER LED flashes to inform of the failure. An abnormality is detected by the signal input state of the control line connected to the microcomputer.

5.1.2 SELF CHECK ITEMS

Check item	Details of detection	Method of detection	State of abnormality
B1 over-current protection	An over-current on the low B1 line is detected.	The main microcomputer detects the possible abnormality at 24-msec. intervals and judges the results in every 16 time. Of the 16 times, if NG is detected more than 9 times, it is judged that there is an abnormality.	When an abnormality has been detected, the SUB-POWER is turned off. While the SUB-POWER is being turned off, the POWER key on the remote control unit is not operational until the power cord is disconnected and connected again.
CRT neck broken protection	Operation of CRT neck protection circuit.		

5.1.3 SELF CHECK INDICATING FUNCTION

When an abnormality has been detected at about 5 seconds after the power was turned on, the SUB POWER is turned off immediately and the POWER LED flashes.



[INDICATION BY THE POWER LED]

Item	LED flashing intervals
B1 over-current protection / CRT neck broken protection	0.3 seconds

JVC
Victor Company of Japan, Limited
AV & MULTIMEDIA COMPANY VIDEO DISPLAY CATEGORY 12, 3-chome, Moriya-cho, kanagawa-ku, Yokohama, kanagawa-prefecture, 221-8528, Japan

(No.YA252)

Printed in Japan
VPT

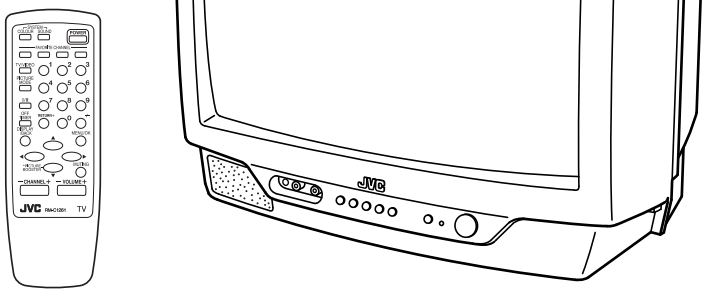
JVC

SCHEMATIC DIAGRAMS

COLOUR TELEVISION

AV-21U4/SK

CD-ROM No.SML200503



BASIC CHASSIS
CW

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No.YA252
2005/3

AV-21U4/SK

STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the ⚠ symbol and shading are critical for safety. For continued safety replace safety ciritical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1)Input signal	: Colour bar signal
(2)Setting positions of each knob/button and variable resistor	: Original setting position when shipped
(3)Internal resistance of tester	: DC 20kΩ/V
(4)Oscilloscope sweeping time	: H ⇒ 20µs / div
	: V ⇒ 5ms / div
	: Othters ⇒ Sweeping time is specified
(5)Voltage values	: All DC voltage values

∗ Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL [EXAMPLE]

● In the PW board : R209 → R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

● Resistance value

No unit	: [Ω]
K	: [kΩ]
M	: [MΩ]

● Rated allowable power

No indication	: 1/16 [W]
Others	: As specified

● Type

No indication	: Carbon resistor
OMR	: Oxide metal film resistor
MFR	: Metal film resistor
MPR	: Metal plate resistor
UNFR	: Uninflammable resistor
FR	: Fusible resistor

∗ Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

● Capacitance value

1 or higher	: [pF]
less than 1	: [µF]

● Withstand voltage

No indication	: DC50[V]
Others	: DC withstand voltage [V]
AC indicated	: AC withstand voltage [V]

∗ Electrolytic Capacitors

47/50[Example]: Capacitance value [µF]/withstand voltage[V]

● Type

No indication	: Ceramic capacitor
MM	: Metalized mylar capacitor
PP	: Polypropylene capacitor
MPP	: Metalized polypropylene capacitor
MF	: Metalized film capacitor
TF	: Thin film capacitor
BP	: Bipolar electrolytic capacitor
TAN	: Tantalum capacitor

(3)Coils

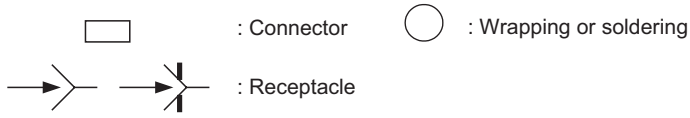
No unit	: [µH]
Others	: As specified

(4)Power Supply

∗ Respective voltage values are indicated

(5)Test point

(6)Connecting method



(7)Ground symbol

5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⏚) side GND. Therefore, care must be taken for the following points.

(1)Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. if the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.

(2)Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

◆ **Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.**

NOTE

◆ **Due improvement in performance, some part numbers show in the circuit diagram may not agree with those indicated in the part list.**
When ordering parts, please use the numbers that appear in the Parts List.

CONTENTS

SEMICONDUCTOR SHAPES 2-2

USING P.W.BOARD 2-2

BLOCK DIAGRAM 2-3

CIRCUIT DIAGRAMS

- **MAIN PWB CIRCUIT DIAGRAM (1/2)** 2-5
- **MAIN PWB CIRCUIT DIAGRAM (2/2)** 2-7
- **CRT SOCKET PWB CIRCUIT DIAGRAM** 2-9

PATTERN DIAGRAMS

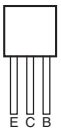
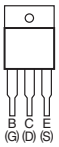
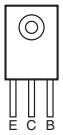
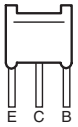
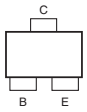
- **MAIN PWB PATTERN, CRT SOCKET PWB PATTERN** 2-11

VOLTAGE CHARTS 2-13

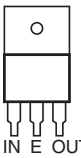
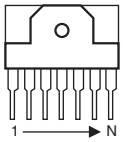
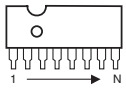
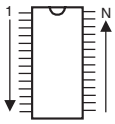
WAVEFORMS 2-14

SEMICONDUCTOR SHAPES

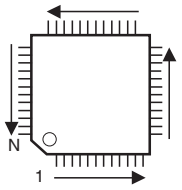
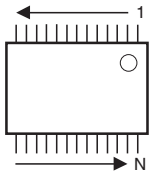
TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
					CHIP TR 

IC

BOTTOM VIEW	FRONT VIEW			TOP VIEW
				

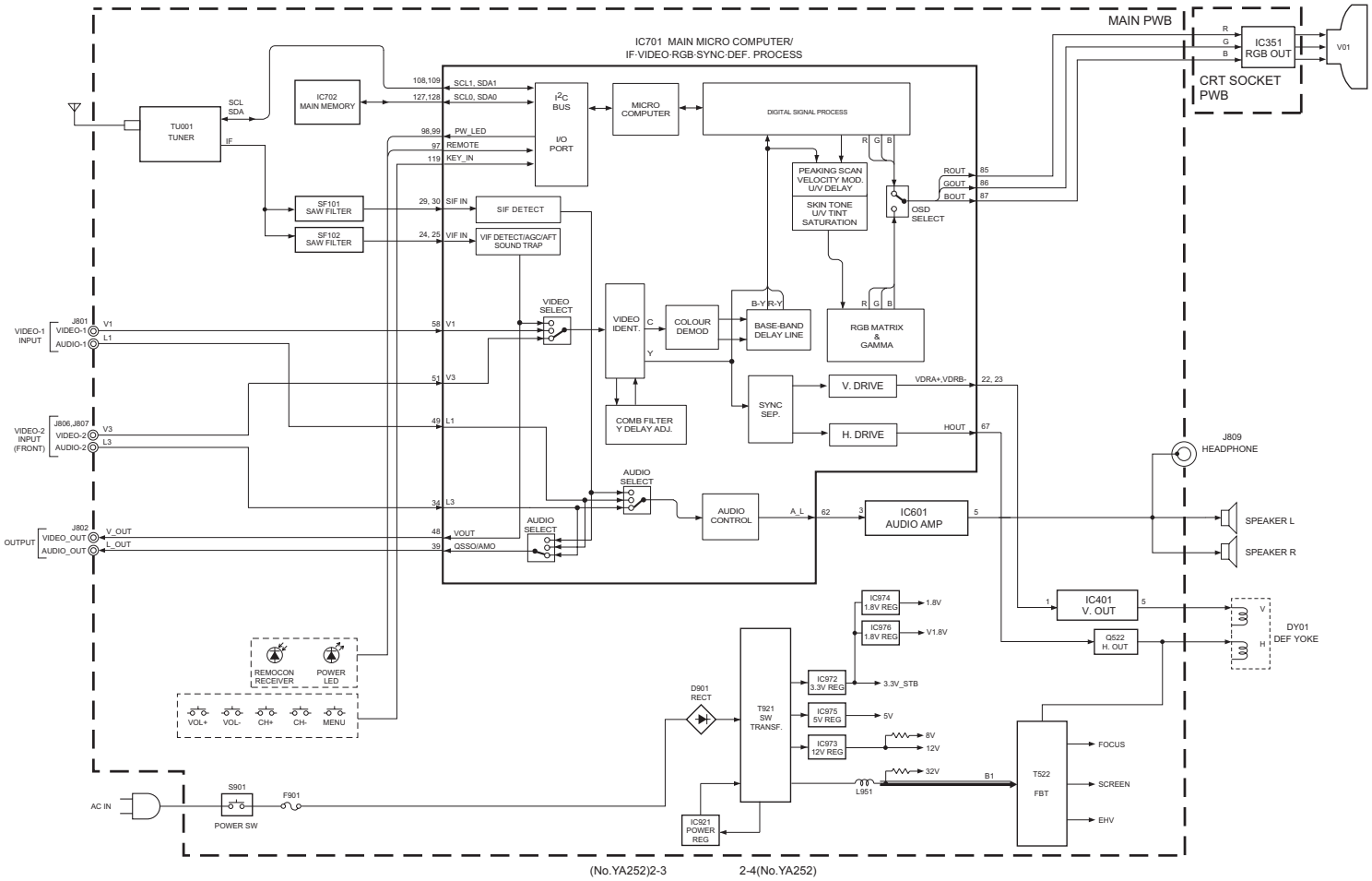
CHIP IC

TOP VIEW		
		

USING P.W. BOARD

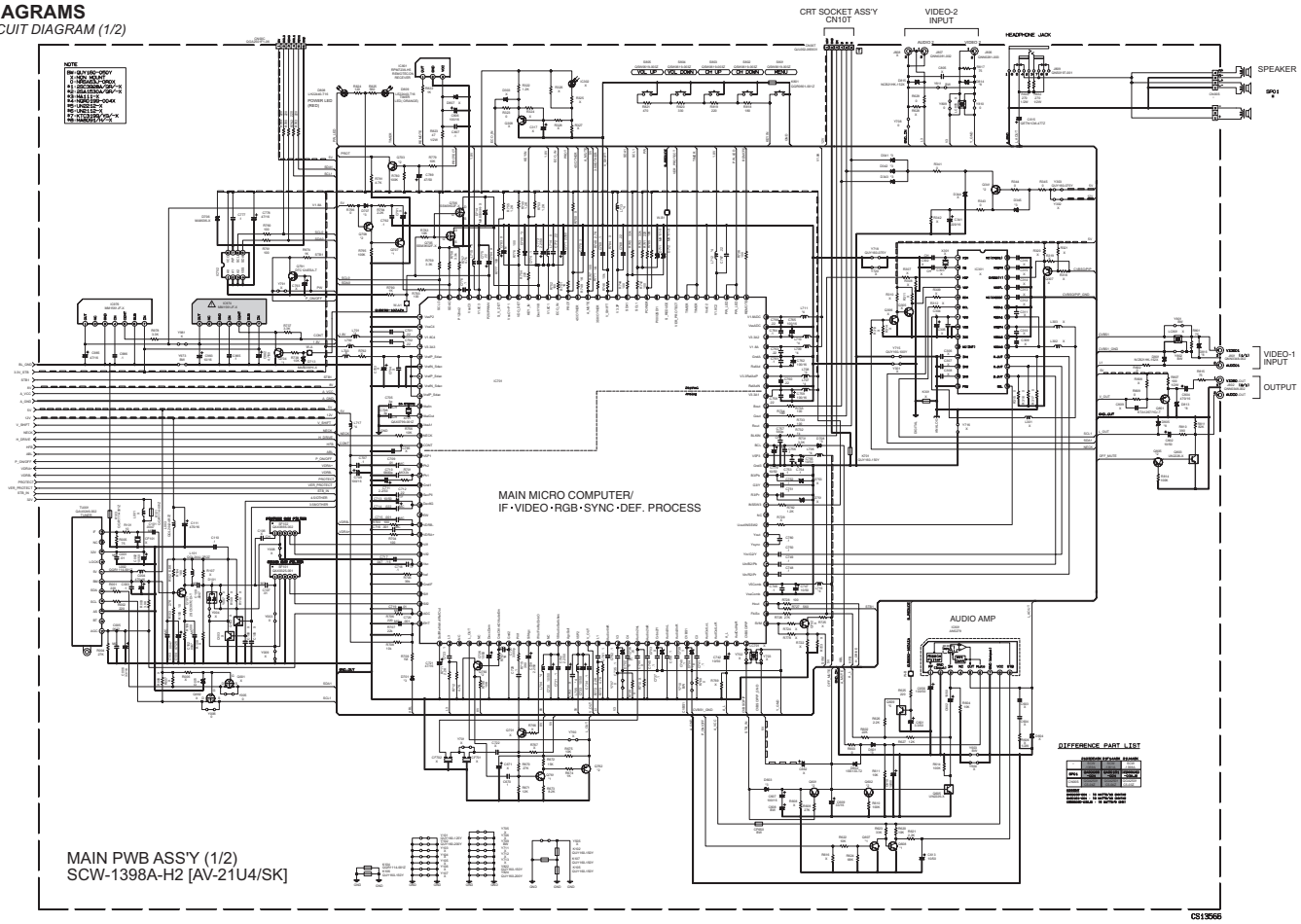
P.W. BOARD ASS'Y NAME	AV-21U4/SK
MAIN P.W. BOARD	SCW-1398A-H2
CRT SOCKET P.W. BOARD	SCW-3013A-H2

BLOCK DIAGRAM



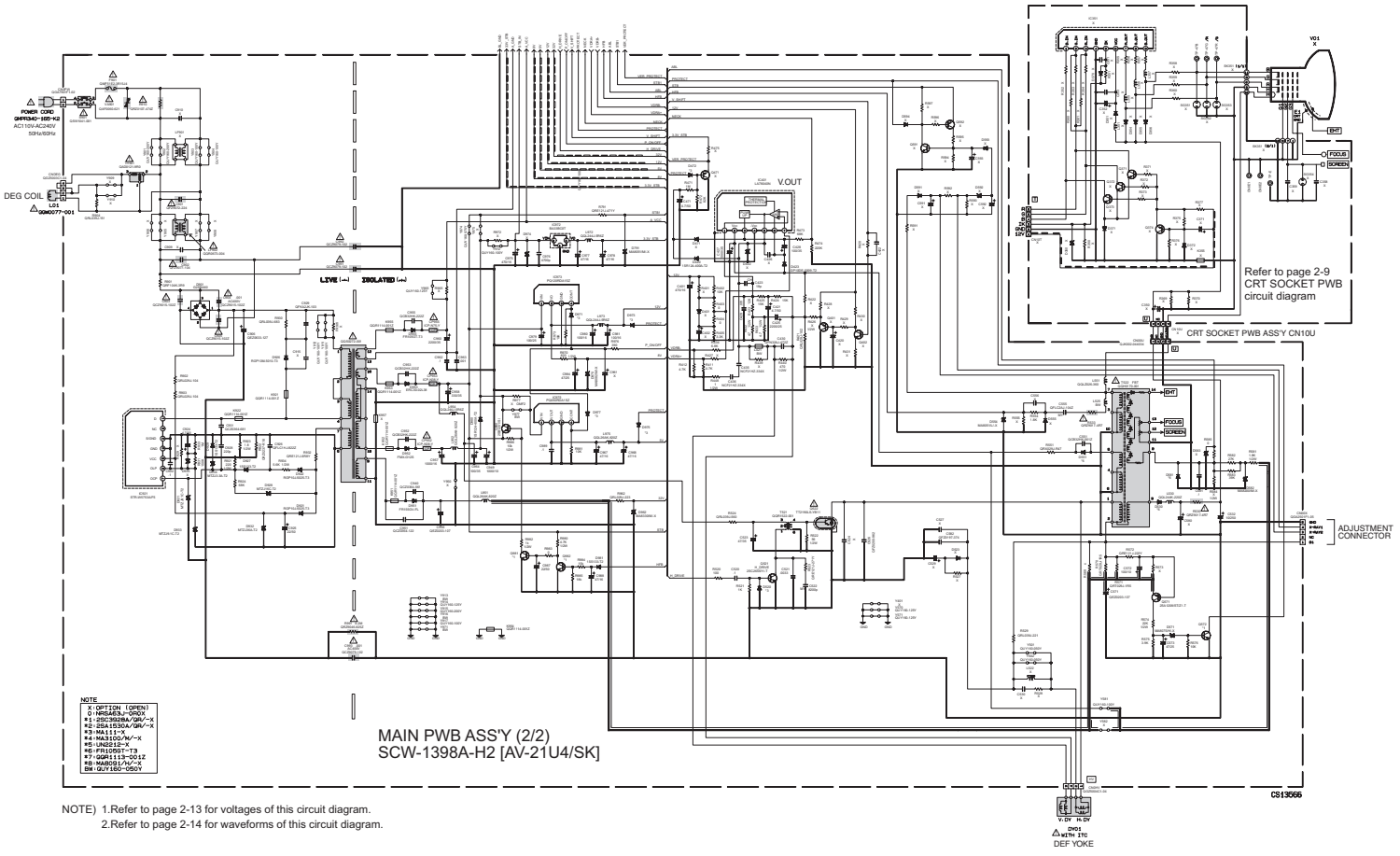
CIRCUIT DIAGRAMS

MAIN PWB CIRCUIT DIAGRAM (1/2)



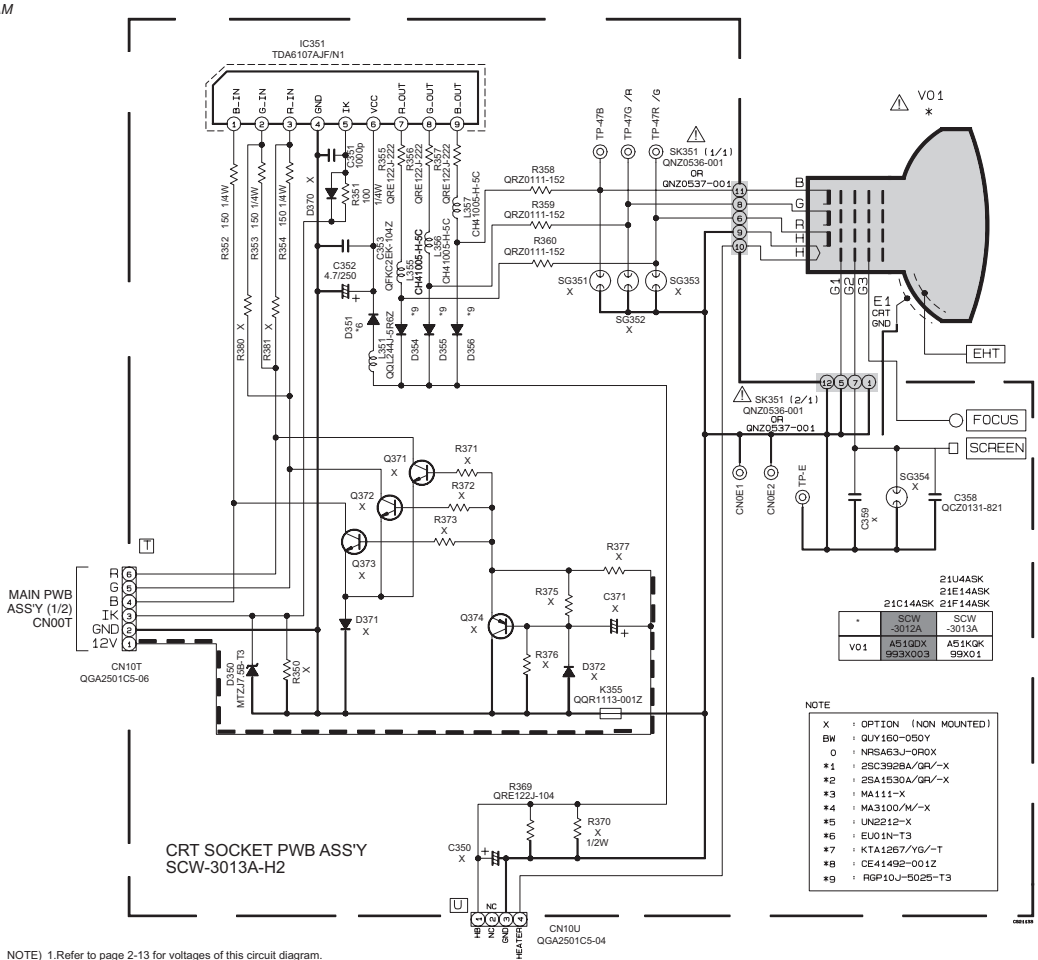
NOTE) 1.Refer to the part list for the part number of IC701 and IC702.
2.Refer to page 2-13 for voltages of this circuit diagram.
3.Refer to page 2-14 for waveforms of this circuit diagram.

MAIN PWB CIRCUIT DIAGRAM (2/2)



NOTE) 1.Refer to page 2-13 for voltages of this circuit diagram.
2.Refer to page 2-14 for waveforms of this circuit diagram.

CRT SOCKET PWB CIRCUIT DIAGRAM



	21U4ASK 21E14ASK 21C14ASK	21F14ASK
*	SCW -3012A	SCW -3013A
V01	A51GDX 993X003	A51KQK 99X01

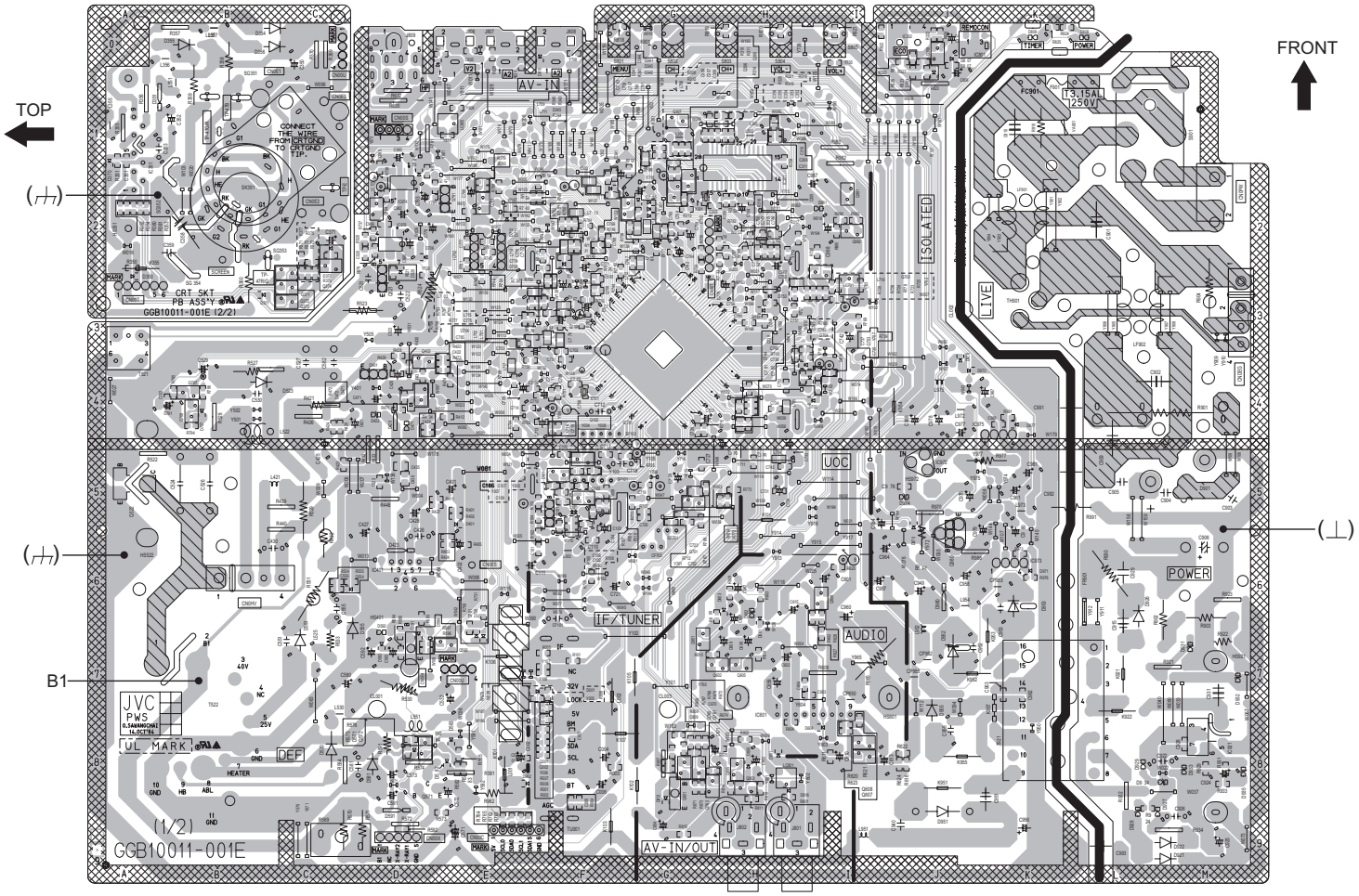
NOTE

X	: OPTION (NON MOUNTED)
BW	: QUY160-050Y
O	: NRSA63J-0ROX
*1	: 2SC3928A/QR/-X
*2	: 2SA1530A/QR/-X
*3	: MA111-X
*4	: MA3100/M/-X
*5	: UN2212-X
*6	: EU01N-T3
*7	: KTA1267/YG/-T
*8	: CE41492-001Z
*9	: RGP10J-5025-T3

NOTE) 1.Refer to page 2-13 for voltages of this circuit diagram.
2.Refer to page 2-14 for waveforms of this circuit diagram.

PATTERN DIAGRAMS

MAIN PWB PATTERN AND CRT SOCKET PWB PATTERN



VOLTAGE CHARTS

<MAIN PWB>

MODE PIN NO.	DC (V)
IC401	
1	2.9
2	25.7
3	1.7
4	0
5	13.0
6	26.0
7	2.9
IC601	
1	18.5
2	0
3	0.1
4	0
5	9.1
6	2.1
7	0
8	19.6
9	13.4
IC701	
1	0
2	0
3	1.8
4	3.2
5	3.2
6	0
7	0
8	0
9	3.3
10	1.5
11	1.5
12	0
13	0
14	2.9
15	4.9
16	1.9
17	2.3
18	0
19	2.3
20	2.3
21	0
22	2.4
23	2.0
24	1.9
25	0
26	2.4
27	1.9
28	0
29	1.9
30	1.9
31	2.1
32	3.3
33	0.1
34	2.2
35	2.2
36	3.5
37	3.5
38	2.2
39	2.5
40	0
41	2.0
42	1.8
43	2.2
44	0.4
45	8.2
46	1.6
47	4.8
48	1.3
49	2.2
50	2.1
51	1.4
52	1.5
53	2.1
54	2.2
55	1.4
56	2.2
57	2.2
58	1.4
59	1.4
60	7.4
61	7.4
62	3.6
63	3.5
64	0
65	2.0
66	0.3
67	1.6
68	0
69	4.9
70	1.3
71	1.3
72	1.3
73	1.9
74	1.7
75	0.1
76	0
77	3.3
78	1.3

MODE PIN NO.	DC (V)
79	1.3
80	1.2
81	0
82	4.8
83	3.5
84	3.7
85	2.1
86	2.1
87	2.0
88	3.2
89	0
90	3.2
91	1.6
92	0
93	1.8
94	3.2
95	0
96	1.7
97	3.2
98	0.1
99	0
100	1.8
101	0
102	3.2
103	3.2
104	0
105	0
106	0.2
107	0
108	3.6
109	3.6
110	3.2
111	0
112	3.2
113	2.9
114	3.2
115	0
116	0
117	1.8
118	1.9
119	3.2
120	0.6
121	0
122	0.5
123	0
124	1.7
125	0
126	3.2
127	3.2
128	3.2
IC750	
1	0
2	0
3	0
4	0
5	3.2
6	3.2
7	0
8	3.2
IC801	
1	3.1
2	3.1
3	0.1
IC821	
1	288.4
3	0
4	0
5	31.8
6	3.6
7	0.9
IC972	
1	1.3
2	0
3	3.3
IC973	
1	14.2
2	11.9
3	0
4	3.2
IC974	
1	1.8
2	0
3	0
4	0.5
5	2.9
6	0
7	3.2
IC975	
1	5.2
2	5.0
3	0
4	3.3
IC976	
1	1.8
2	0
3	0
4	0.5

MODE PIN NO.	DC (V)
5	3.0
6	0
7	3.2
Q101	
E	2.2
C	11.6
B	3.0
Q521	
E	0
C	8.9
B	0
Q522	
E	0
C	112.0
B	-0.1
Q571	
E	115.3
C	0
B	114.8
Q572	
E	0
C	3.2
B	0
Q601	
E	8.1
C	0.2
B	8.2
Q602	
E	0.2
C	-0.2
B	0
Q605	
E	0
C	2.3
B	-0.2
Q607	
E	0
C	0
B	0.6
Q608	
E	0
C	14.6
B	0
Q703	
E	3.2
C	0
B	3.2
Q801	
E	2.0
C	0
B	1.3
Q803	
E	0
C	0
B	-1.0
Q805	
E	0.2
C	-1.0
B	0
Q980	
E	14.2
C	6.4
B	14.2
Q981	
E	0
C	14.2
B	0
Q982	
E	0
C	0
B	0.7
TU001	
1	2.2
2	3.7
3	0
4	3.5
5	3.5
6	4.8
7	4.8
8	0
9	34.6
10	0
11	0

<CRT SOCKET PWB>

MODE PIN NO.	DC (V)
IC351	
1	2.1
2	2.1
3	2.2
4	0
5	5.0
6	185.7
7	114.6
8	118.4
9	121.3

WAVEFORMS

-MAIN PWB-

IC401-1

0.8Vp-p

IC401-3

25Vp-p

IC401-5

48Vp-p

IC401-6

27Vp-p

IC701-10

2.4Vp-p

IC701-11

3.0Vp-p

IC701-22

1.9Vp-p

IC701-23

2.6Vp-p

IC701-48

2.0Vp-p

IC701-66

5.0Vp-p

IC701-67

3.0Vp-p

IC701-74

0.3Vp-p

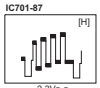
IC701-85

2.0Vp-p

IC701-86

1.5Vp-p

IC701-87



2.3Vp-p

T522-2

3.0Vp-p

T522-3

50Vp-p

T522-4

4.5Vp-p

T522-5

230Vp-p

T522-7

30Vp-p

T522-9

200Vp-p

Q521-B

1.4Vp-p

Q521-C

34Vp-p

Q522-B

9.0Vp-p

Q522-C

960Vp-p

-CRT SOCKET PWB-

IC351-7

110Vp-p

IC351-8

150Vp-p

IC351-9

160Vp-p

JVC
Victor Company of Japan, Limited
AV & MULTIMEDIA COMPANY VIDEO DISPLAY CATEGORY 12, 3-chome, Moriya-cho, kanagawa-ku, Yokohama, kanagawa-prefecture, 221-8528, Japan

(No.YA252)

Printed in Japan
VPT

PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety . Whenever replacing these parts, be sure to use specified ones to secure the safety.
- The parts not indicated in this Parts List and those which are filled with lines --- in the Parts No. columns will not be supplied.
- P.W. BOARD Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS	
CR	Carbon Resistor
FR	Fusible Resistor
PR	Plate Resistor
VR	Variable Resistor
HV R	High Voltage Resistor
MF R	Metal Film Resistor
MG R	Metal Glazed Resistor
MP R	Metal Plate Resistor
OM R	Metal Oxide Film Resistor
CMF R	Coating Metal Film Resistor
UNF R	Non-Flammable Resistor
CH V R	Chip Variable Resistor
CH MG R	Chip Metal Glazed Resistor
COMP. R	Composition Resistor
LPTC R	Linear Positive Temperature Coefficient Resistor

CAPACITORS	
C CAP.	Ceramic Capacitor
E CAP.	Electrolytic Capacitor
M CAP.	Mylar Capacitor
CH CAP.	Chip Capacitor
HV CAP.	High Voltage Capacitor
MF CAP.	Metalized Film Capacitor
MM CAP.	Metalized Mylar Capacitor
MP CAP.	Metalized Polystyrol Capacitor
PP CAP.	Polypropylene Capacitor
PS CAP.	Polystyrol Capacitor
TF CAP.	Thin Film Capacitor
MPP CAP.	Metalized Polypropylene Capacitor
TAN. CAP.	Tantalum Capacitor
CH C CAP.	Chip Ceramic Capacitor
BP E CAP.	Bi-Polar Electrolytic Capacitor
CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

RESISTORS									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

CONTENTS

USING P.W. BOARD & REMOTE CONTROL UNIT 3-3
EXPLODED VIEW PARTS LIST -1 3-3
EXPLODED VIEW -1 3-3
EXPLODED VIEW PARTS LIST -2 3-4
EXPLODED VIEW -2 3-5

PRINTED WIRING BOARD PARTS LIST 3-6
MAIN P.W. BOARD ASS'Y (SCW-1398A-H2) 3-6
CRT SOCEK P.W. BOARD ASS'Y (SCW-3013A-H2) 3-9

REMOTE CONTROL UNIT PARTS LIST (RM-C1261-2H) 3-9
PACKING 3-10
PACKING PARTS LIST 3-10

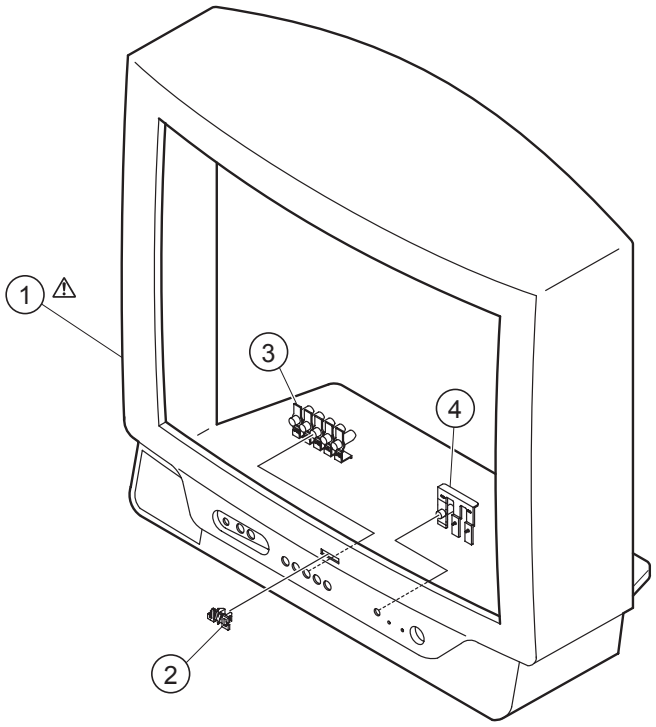
USING P.W. BOARD & REMOTE CONTROL UNIT

P.W.B ASS'Y	AV-21U4/SK
MAIN P.W.B	SCW-1398A-H2
CRT SOCKET P.W.B	SCW-3013A-H2
REMOTE CONTROL UNIT	RM-C1261-2H

EXPLODED VIEW PARTS LIST -1

⚠	Ref.No.	Part No.	Part Name	Description	Local
⚠	1	LC10156-006A-HK	FRONT CABINET		
	2	CM47783-003-H	JVC MARK		
	3	LC30337-002A-H	CONTROL KNOB		
	4	LC32676-001A-H	LED LENS		

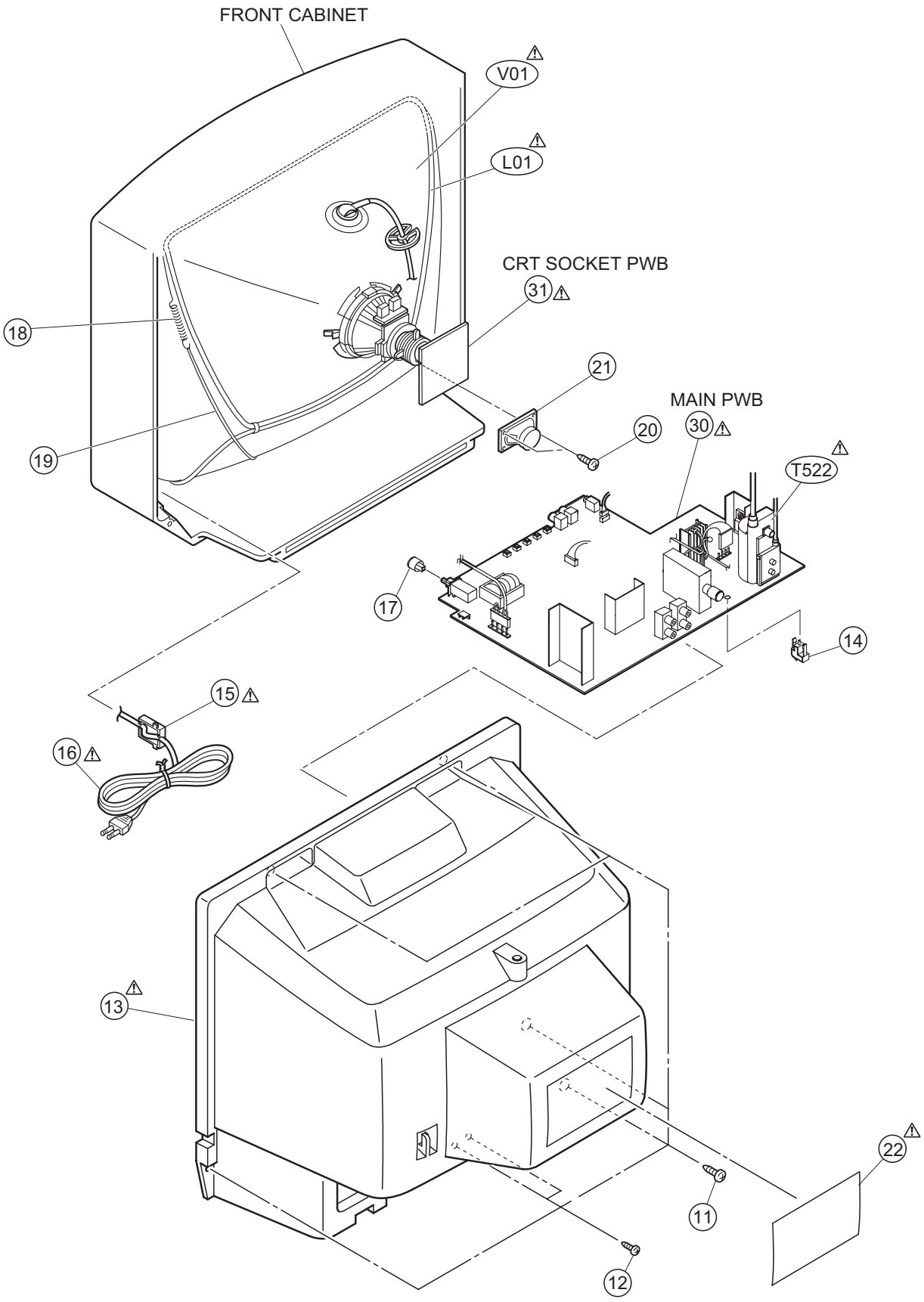
EXPLODED VIEW -1



EXPLODED VIEW PARTS LIST -2

⚠	Ref.No.	Part No.	Part Name	Description	Local
⚠	V01	A51KQK99X01	PICTURE TUBE(ITC)	Inc.DEF YOKE,PC MAGNET	
⚠	L01	QQW0077-001	DEG COIL		
⚠	T522	QQH0170-001	FB TRANSF		
	11	QYSBSFG4016ZA	TAP SCREW	M4 x 16mm(x5)	
	12	QYSBSF3010ZA	TAP SCREW	M3 x 10mm(x2)	
⚠	13	LC10157-004A-HK	REAR COVER		
	14	CM48144-004-H	PB STOPPER		
⚠	15	LC32677-001A-H	PW CORD CLAMP		
⚠	16	QMPR340-165-K2	POWER CORD	1.65m BLACK	
	17	LC30336-003A-H	POWER KNOB		
	18	A48457-3-H	SPRING		
	19	CHGB0016-0B-FH	BRAIDED WIRE		
	20	QYSBSFG4016ZA	TAP SCREW	M4 x 16mm(x2)	
	21	QAS0054-001	SPEAKER	SP01	
⚠	22	GG20024-001B-H	RATING LABEL		
⚠	30	SCW-1398A-H2	MAIN BOARD ASSY		
⚠	31	SCW-3013A-H2	CRT BOARD ASSY		

EXPLODED VIEW -2



PRINTED WIRING BOARD PARTS LIST

MAIN P.W. BOARD ASS'Y (SCW-1398A-H2)

⚠Ref No.	Part No.	Part Name	Description	Local
IC401	LA78040N	IC		
IC601	AN5279	IC		
IC701	TDA11020-ERU	IC(MCU)	(SERVICE)	
IC702	AT24C16-21C14	IC	(SERVICE)	
IC801	RPM7238-H5	IR DETECT UNIT		
IC921	STR-W5753A/F5	IC		
IC972	BA33BC0T	REGULATOR IC		
IC973	PQ120RDA1SZ	IC		
IC974	MM1561JF-X	IC		
IC975	PQ050RDA1SZ	IC		
IC976	MM1561JF-X	IC		
Q101	2SC5397/CD/-T	TRANSISTOR		
Q341	2SA1530A/QR/-X	TRANSISTOR		
Q521	2SC2655/Y/-T	TRANSISTOR		
⚠Q522	TT2190LS-YB11	TRANSISTOR		
Q571	2SA1208/ST/Z1-T	TRANSISTOR		
Q572	2SC3928A/QR/-X	TRANSISTOR		
Q601	2SA1530A/QR/-X	TRANSISTOR		
Q602	2SA1530A/QR/-X	TRANSISTOR		
Q605	UN2226-X	DIGI TRANSISTOR		
Q607	2SC3928A/QR/-X	TRANSISTOR		
Q608	2SC3928A/QR/-X	TRANSISTOR		
Q609	UN2212-X	DIGI TRANSISTOR		
Q703	2SA1530A/QR/-X	TRANSISTOR		
Q704	2SC3928A/QR/-X	TRANSISTOR		
Q705	SSM3K02F-X	MOS FET		
Q706	SSM3K02F-X	MOS FET		
Q707	2SC3928A/QR/-X	TRANSISTOR		
Q708	2SA1530A/QR/-X	TRANSISTOR		
Q760	2SA1530A/QR/-X	TRANSISTOR		
Q761	2SC3928A/QR/-X	TRANSISTOR		
Q762	2SA1530A/QR/-X	TRANSISTOR		
Q791	DTC124ESA-T	DIGI TRANSISTOR		
Q801	KTA1267/YG/-T	TRANSISTOR		
Q803	UN2226-X	DIGI TRANSISTOR		
Q805	2SA1530A/QR/-X	TRANSISTOR		
Q980	2SB1201/S/	TRANSISTOR		
Q981	2SC3928A/QR/-X	TRANSISTOR		
Q982	2SC3928A/QR/-X	TRANSISTOR		
D341	MA111-X	SI DIODE		
D342	MA111-X	SI DIODE		
D343	MA111-X	SI DIODE		
D345	MA111-X	SI DIODE		
D420	1SR124-400A-T2	SI DIODE		
D423	GP10DE-5009-T2	SI DIODE		
D472	MA111-X	SI DIODE		
D520	MA111-X	SI DIODE		
D530	FR105GT-T3	SI DIODE		
D551	FR105GT-T3	SI DIODE		
D554	MA8051/L/-X	Z DIODE		
D571	MA8075/H/-X	Z DIODE		
D581	FR105GT-T3	SI DIODE		
D582	MA8200/M/-X	Z DIODE		
D601	MA111-X	SI DIODE		
D602	1SS133-T2	SI DIODE		
D603	MA111-X	SI DIODE		
D701	MA111-X	SI DIODE		
D702	MA8091/H/-X	Z DIODE		
D704	MA8091/H/-X	Z DIODE		
D706	MA8036-X	Z DIODE		
D707	MA111-X	SI DIODE		
D708	MA111-X	SI DIODE		
D709	MA111-X	SI DIODE		
D711	MA111-X	SI DIODE		
D712	MA111-X	SI DIODE		
D713	MA8039/H/-X	Z DIODE		
D714	MA8030/H/-X	Z DIODE		
D791	MA8051/M/-X	Z DIODE		
D801	NCB21HK-152X	C CAPACITOR	1500pF 50V K	
D805	MA8091/H/-X	Z DIODE		
D808	LH22440-T16	LED	POWER(RED)	
D809	LE22440-T16	LED	ECO SENSOR(ORG)	
D813	MA8091/H/-X	Z DIODE		
D814	MA8091/H/-X	Z DIODE		
D815	NCB21HK-152X	C CAPACITOR	1500pF 50V K	
D816	MA8091/H/-X	Z DIODE		
D921	RGP10J-5025-T3	SI DIODE		
D922	RGP10J-5025-T3	SI DIODE		
D926	RGP10M-5010-T3	SI DIODE		
D927	1SS133-T2	SI DIODE		
D928	MTZJ16C-T2	Z DIODE		
D929	1SS133-T2	SI DIODE		
D931	MTZJ9.1C-T2	Z DIODE		
D932	MTZJ36A-T2	Z DIODE		
D933	MTZJ9.1C-T2	Z DIODE		
D934	MTZJ3.3A-T2	Z DIODE		
D951	FR155GV-FL	SI DIODE		
D952	FMX-G12S	SI DIODE		
D953	ERC30-02L38	SI DIODE		
D955	FR105GT-T3	SI DIODE		
D962	MA8330/M/-X	Z DIODE		
D970	MA8082/M/-X	Z DIODE		
D971	MA111-X	SI DIODE		
D973	MA111-X	SI DIODE		
D975	MA111-X	SI DIODE		
D977	MA111-X	SI DIODE		
D980	1SR124-400A-T2	SI DIODE		
D981	1SS133-T2	SI DIODE		
C001	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C002	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C003	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C004	QETN1CM-477Z	E CAPACITOR	470uF 16V M	
C005	NCB31HK-222X	C CAPACITOR	2200pF 50V K	
C006	QETN1CM-336Z	E CAPACITOR	33uF 16V M	
C101	NCB31HK-472X	C CAPACITOR	4700pF 50V K	
C102	NCB31HK-472X	C CAPACITOR	4700pF 50V K	
C103	NCB31HK-472X	C CAPACITOR	4700pF 50V K	
C104	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C107	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C109	NCB31HK-472X	C CAPACITOR	4700pF 50V K	
C110	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C111	QETN1CM-477Z	E CAPACITOR	470uF 16V M	
C341	QETN1CM-227Z	E CAPACITOR	220uF 16V M	
C401	QETN1CM-477Z	E CAPACITOR	470uF 16V M	
C421	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C423	NDC31HJ-180X	C CAPACITOR	18pF 50V J	
C425	QETM1EM-228	E CAPACITOR	2200uF 25V M	
C427	QEHR1VM-108Z	E CAPACITOR	1000uF 35V M	
C428	QETN1VM-107Z	E CAPACITOR	100uF 35V M	
C429	QFLC1HJ-102Z	M CAPACITOR	1000pF 50V J	
C430	QFN32AJ-472Z	M CAPACITOR	4700pF 100V J	
C435	NCF21HZ-334X	C CAPACITOR	0.33uF 50V Z	
C436	NCF21HZ-334X	C CAPACITOR	0.33uF 50V Z	
C471	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C520	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C521	QCB31HK-332Z	C CAPACITOR	3300pF 50V K	
C522	QFLC1HJ-822Z	M CAPACITOR	8200pF 50V J	
C523	QETN1VM-476Z	E CAPACITOR	47uF 35V M	
C526	QFZ0200-962	MPP CAPACITOR	9600pF 1.5kV H	
C532	QETN2EM-106Z	E CAPACITOR	10uF 250V M	
C551	QCB32HK-561Z	C CAPACITOR	560pF 500V K	
C555	QFLC2AJ-104Z	M CAPACITOR	0.1uF 100V J	
C571	QEZ0203-107	E CAPACITOR	100uF 160V M	
C572	QETN1AM-107Z	E CAPACITOR	100uF 10V M	
C573	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C581	QFVF1HJ-104Z	MF CAPACITOR	0.1uF 50V J	
C582	QFZ0197-374	MPP CAPACITOR	0.37uF 250V J	
C601	QETN1HM-335Z	E CAPACITOR	3.3uF 50V M	
C602	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C607	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C609	QETN1CM-336Z	E CAPACITOR	33uF 16V M	
C610	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C613	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C615	QETN1CM-477Z	E CAPACITOR	470uF 16V M	
C656	QETN1HM-107Z	E CAPACITOR	100uF 50V M	
C670	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C701	NCB31CK-224X	C CAPACITOR	0.22uF 16V K	
C702	NCB31CK-224X	C CAPACITOR	0.22uF 16V K	
C705	NDC31HJ-3R0X	C CAPACITOR	3pF 50V J	
C706	NDC31HJ-3R0X	C CAPACITOR	3pF 50V J	
C707	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C708	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C709	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C710	NCB31HK-682X	C CAPACITOR	6800pF 50V K	
C711	QETN1HM-225Z	E CAPACITOR	2.2uF 50V M	
C712	QFVF1HJ-224Z	MF CAPACITOR	0.22uF 50V J	
C713	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C714	NCB31HK-223X	C CAPACITOR	0.022uF 50V K	
C715	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C716	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C717	NCB31HK-473X	C CAPACITOR	0.047uF 50V K	
C718	QFVF1HJ-104Z	MF CAPACITOR	0.1uF 50V J	
C719	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	

⚠Ref No.	Part No.	Part Name	Description Local
C720	NCB31HK-102X	C CAPACITOR	1000pF 50V K
C721	QETN1CM-476Z	E CAPACITOR	47uF 16V M
C723	NCB21CK-105X	C CAPACITOR	1uF 16V K
C726	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C727	NCB31HK-332X	C CAPACITOR	3300pF 50V K
C728	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C729	QETN1HM-225Z	E CAPACITOR	2.2uF 50V M
C730	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C731	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C732	QETN1HM-225Z	E CAPACITOR	2.2uF 50V M
C733	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C734	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C735	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C736	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C737	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C738	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C739	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C740	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C741	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C742	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C745	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C746	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C747	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C748	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C749	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C750	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C751	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C752	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C753	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C754	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C755	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C756	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C757	NDC31HJ-561X	C CAPACITOR	560pF 50V J
C758	NCB31CK-224X	C CAPACITOR	0.22uF 16V K
C759	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C760	NCB31CK-224X	C CAPACITOR	0.22uF 16V K
C761	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C762	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C763	NCB31CK-224X	C CAPACITOR	0.22uF 16V K
C764	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C765	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C766	NCB31CK-224X	C CAPACITOR	0.22uF 16V K
C767	NCB31CK-224X	C CAPACITOR	0.22uF 16V K
C768	NCB31CK-224X	C CAPACITOR	0.22uF 16V K
C769	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C770	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C771	QETN1HM-226Z	E CAPACITOR	22uF 50V M
C772	NCB31CK-224X	C CAPACITOR	0.22uF 16V K
C773	QETN1HM-225Z	E CAPACITOR	2.2uF 50V M
C774	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C775	NCB31CK-224X	C CAPACITOR	0.22uF 16V K
C776	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C777	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C778	QETN1CM-476Z	E CAPACITOR	47uF 16V M
C779	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C780	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C781	NCB21CK-105X	C CAPACITOR	1uF 16V K
C782	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C789	QETN1HM-476Z	E CAPACITOR	47uF 50V M
C792	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C802	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C804	QETN1CM-477Z	E CAPACITOR	470uF 16V M
C806	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C807	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
⚠C901	QFZ9072-224	MM CAPACITOR	0.22uF AC250V K
⚠C902	QFZ9077-104	MPP CAPACITOR	0.1uF 250V M
⚠C903	QCZ9015-102Z	C CAPACITOR	1000pF AC250V Z
⚠C904	QCZ9015-102Z	C CAPACITOR	1000pF AC250V Z
⚠C905	QCZ9015-102Z	C CAPACITOR	1000pF AC250V Z
C906	QEZ0633-127	E CAPACITOR	120uF 450V M
C922	QFLC1HJ-104Z	M CAPACITOR	0.1uF 50V J
C924	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M
C925	QETN1HM-226Z	E CAPACITOR	22uF 50V M
C926	QFLC1HJ-822Z	M CAPACITOR	8200pF 50V J
C928	NCB31HK-221X	C CAPACITOR	220pF 50V K
C929	QFKA2JK-103	MM CAPACITOR	0.01uF 630V K
C931	QCZ0364-681	C CAPACITOR	680pF 2kV K
C940	QCZ0364-561	C CAPACITOR	560pF 2kV K
C949	QETN1AM-108Z	E CAPACITOR	1000uF 10V M
C951	QCZ0364-122	C CAPACITOR	1200pF 2kV K
C952	QCB32HK-222Z	C CAPACITOR	2200pF 500V K
C953	QCB32HK-222Z	C CAPACITOR	2200pF 500V K
C955	QCB32HK-222Z	C CAPACITOR	2200pF 500V K
C956	QEZ0203-107	E CAPACITOR	100uF 160V M
C957	QETN1CM-108Z	E CAPACITOR	1000uF 16V M
C958	QETN1VM-337Z	E CAPACITOR	330uF 35V M
C960	QETM1VM-228	E CAPACITOR	2200uF 35V M
C962	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C963	NCB31HK-102X	C CAPACITOR	1000pF 50V K
C964	QETN1VM-107Z	E CAPACITOR	100uF 35V M
C965	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C967	QETN1CM-476Z	E CAPACITOR	47uF 16V M
C968	QETN1CM-476Z	E CAPACITOR	47uF 16V M
C975	QETN1CM-477Z	E CAPACITOR	470uF 16V M
C976	NCB31HK-472X	C CAPACITOR	4700pF 50V K
C977	QETN1CM-476Z	E CAPACITOR	47uF 16V M
C978	QETN1CM-476Z	E CAPACITOR	47uF 16V M
C979	QETN1EM-107Z	E CAPACITOR	100uF 25V M
C980	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C981	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C982	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M
C983	QETN1CM-106Z	E CAPACITOR	10uF 16V M
C984	QETN1EM-476Z	E CAPACITOR	47uF 25V M
C985	QETN1CM-476Z	E CAPACITOR	47uF 16V M
C986	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C987	QETN1HM-226Z	E CAPACITOR	22uF 50V M
C988	QETN1CM-476Z	E CAPACITOR	47uF 16V M
C989	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
⚠C991	QCZ9079-102	C CAPACITOR	1000pF AC250V M
⚠C992	QCZ9079-102	C CAPACITOR	1000pF AC250V M
⚠C993	QCZ9079-102	C CAPACITOR	1000pF AC250V M
R001	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R002	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R003	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J
R004	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J
R005	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R101	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J
R102	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J
R103	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J
R104	NRSA63J-181X	MG RESISTOR	180Ω 1/16W J
R105	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J
R106	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R315	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R316	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R317	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R322	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J
R323	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R341	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R343	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R344	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R345	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R402	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R403	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R404	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R405	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R411	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R412	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R421	QRL029J-102	OMF RESISTOR	1kΩ 2W J
R423	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R424	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J
R425	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J
R432	QRE121J-4R7Y	C RESISTOR	4.7Ω 1/2W J
R433	QRE121J-4R7Y	C RESISTOR	4.7Ω 1/2W J
R434	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J
R440	QRE121J-471Y	C RESISTOR	470Ω 1/2W J
R448	QRE121J-1R0Y	C RESISTOR	1Ω 1/2W J
R471	NRSA63J-105X	MG RESISTOR	1MΩ 1/16W J
R472	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J
R473	NRSA63J-683X	MG RESISTOR	68kΩ 1/16W J
R474	NRSA63J-224X	MG RESISTOR	220kΩ 1/16W J
R520	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R521	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R522	QRE121J-560Y	C RESISTOR	56Ω 1/2W J
R523	QRE121J-271Y	C RESISTOR	270Ω 1/2W J
R524	QRL039J-560	OMF RESISTOR	56Ω 3W J
R529	QRL039J-221	OMF RESISTOR	220Ω 3W J
⚠R530	QRZ9017-4R7	FUSI RESISTOR	4.7Ω 1/4W J
⚠R533	QRZ9017-4R7	FUSI RESISTOR	4.7Ω 1/4W J
R551	QRX029J-R47	MF RESISTOR	0.47Ω 2W J
R554	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J
R570	QRT029J-1R5	MF RESISTOR	1.5Ω 2W J
R571	QRT029J-1R5	MF RESISTOR	1.5Ω 2W J
R572	QRE121J-222Y	C RESISTOR	2.2kΩ 1/2W J
R574	QRE121J-223Y	C RESISTOR	22kΩ 1/2W J
R575	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J
R576	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R581	QRE121J-182Y	C RESISTOR	1.8kΩ 1/2W J
R582	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J
R583	NRSA63J-393X	MG RESISTOR	39kΩ 1/16W J
R585	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R602	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R603	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R604	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J

⚠Ref No.	Part No.	Part Name	Description Local
R609	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J
R610	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R611	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R614	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R620	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R621	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R622	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R623	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R624	NRSA63J-683X	MG RESISTOR	68kΩ 1/16W J
R625	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R626	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R627	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R629	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R630	QRE121J-271Y	C RESISTOR	270Ω 1/2W J
R632	QRE121J-271Y	C RESISTOR	270Ω 1/2W J
R670	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J
R671	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R672	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J
R673	NRSA63J-822X	MG RESISTOR	8.2kΩ 1/16W J
R674	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R675	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R701	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R703	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R704	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R705	NRSA63J-393X	MG RESISTOR	39kΩ 1/16W J
R706	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R707	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R708	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R709	NRSA63J-105X	MG RESISTOR	1MΩ 1/16W J
R711	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R712	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R715	NRSA63J-391X	MG RESISTOR	390Ω 1/16W J
R726	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J
R727	NRSA63J-561X	MG RESISTOR	560Ω 1/16W J
R728	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R731	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R732	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R733	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R734	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R735	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R736	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R737	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R738	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R740	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J
R741	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R742	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R743	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R744	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R745	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R746	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R747	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R748	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J
R749	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R751	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R752	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R753	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J
R754	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R755	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J
R756	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R757	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R758	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R759	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R760	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R761	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R762	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R763	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R764	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R765	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R768	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R771	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R772	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R773	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R776	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R777	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R779	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R780	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R781	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R782	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J
R783	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R785	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R790	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R791	QRE121J-471Y	C RESISTOR	470Ω 1/2W J
R793	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R794	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R795	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R796	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R797	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R798	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R801	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R802	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R807	QRE121J-101Y	C RESISTOR	100Ω 1/2W J
R809	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R810	NRSA63J-391X	MG RESISTOR	390Ω 1/16W J
R811	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J
R814	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R815	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R817	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R818	NRSA63J-181X	MG RESISTOR	180Ω 1/16W J
R819	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R820	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J
R821	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R822	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R823	QRE121J-470Y	C RESISTOR	47Ω 1/2W J
R824	NRSA63J-121X	MG RESISTOR	120Ω 1/16W J
R825	NRSA63J-561X	MG RESISTOR	560Ω 1/16W J
R901	QRF104K-3R9	UNF WW RESISTOR	3.9Ω 10W K
R902	QRL029J-104	OMF RESISTOR	100kΩ 2W J
R903	QRL029J-104	OMF RESISTOR	100kΩ 2W J
R904	QRL039J-151	OMF RESISTOR	150Ω 3W J
⚠R910	QRZ0107-474Z	C RESISTOR	470kΩ 1/2W K
R921	QRE121J-221Y	C RESISTOR	220Ω 1/2W J
R922	QRZ0237-R18	UNF WW RESISTOR	0.18Ω 3W J
R923	QRE121J-1R8Y	C RESISTOR	1.8Ω 1/2W J
R924	NRSA63J-683X	MG RESISTOR	68kΩ 1/16W J
R930	QRL039J-683	OMF RESISTOR	68kΩ 3W J
R931	NRSA63J-154X	MG RESISTOR	150kΩ 1/16W J
⚠R932	QRE121J-6R8Y	C RESISTOR	6.8Ω 1/2W J
R933	NRSA63J-105X	MG RESISTOR	1MΩ 1/16W J
R934	QRE121J-562Y	C RESISTOR	5.6kΩ 1/2W J
R962	QRL029J-223	OMF RESISTOR	22kΩ 2W J
R970	QRE121J-821Y	C RESISTOR	820Ω 1/2W J
R973	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R974	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R976	NRSA63J-391X	MG RESISTOR	390Ω 1/16W J
R978	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R980	QRE121J-472Y	C RESISTOR	4.7kΩ 1/2W J
R981	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R982	QRE121J-102Y	C RESISTOR	1kΩ 1/2W J
R983	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R984	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J
R985	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J
R986	QRE121J-103Y	C RESISTOR	10kΩ 1/2W J
⚠R991	QRZ9046-825Z	C RESISTOR	8.2MΩ 1/2W K
L002	QQR1114-001Z	FERRITE BEADS	
L003	QQL244J-4R7Z	PEAKING COIL	4.7uH J
L101	QQL244J-2R2Z	PEAKING COIL	2.2uH J
L530	QQL244K-220Z	PEAKING COIL	22uH K
L551	QQLZ026-360	COIL	36uH ±7%
L701	NQR0199-004X	FERRITE BEADS	
L702	NQR0199-004X	FERRITE BEADS	
L704	NQR0199-004X	FERRITE BEADS	
L705	NQR0199-004X	FERRITE BEADS	
L706	NQR0199-004X	FERRITE BEADS	
L707	NQR0199-004X	FERRITE BEADS	
L708	NQR0199-004X	FERRITE BEADS	
L709	NQR0199-004X	FERRITE BEADS	
L710	NQR0199-004X	FERRITE BEADS	
L711	NQR0199-004X	FERRITE BEADS	
L712	NQR0199-004X	FERRITE BEADS	
L713	NQR0199-004X	FERRITE BEADS	
L714	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J
L715	NQR0199-004X	FERRITE BEADS	
L716	NQR0199-004X	FERRITE BEADS	
L717	NQR0199-004X	FERRITE BEADS	
L951	QQL26AK-820Z	CHOKE COIL	82uH K
L952	QQL26AK-820Z	CHOKE COIL	82uH K
L954	QQL244J-5R6Z	COIL	5.6uH J
L972	QQL244J-5R6Z	COIL	5.6uH J
L973	QQL244J-5R6Z	COIL	5.6uH J
L975	QQL26AK-820Z	CHOKE COIL	82uH K
T521	QQR1522-001	DRIVE TRANSF	
⚠T921	QQS0272-001	SW TRANSF	
⚠CP952	ICP-N38-Y	IC PROTECTOR	1.5A
⚠CP953	ICP-N38-Y	IC PROTECTOR	1.5A
⚠CP955	ICP-N75-Y	IC PROTECTOR	2.7A
⚠F901	QMF51E2-3R15J4	FUSE	3.15A AC250V
J801	QNN0348-002	PIN JACK	VIDEO1
J802	QNN0348-002	PIN JACK	VIDEO OUT
J806	QNN0281-003	PIN JACK	VIDEO2/V3
J807	QNN0281-002	PIN JACK	VIDEO2/L3
J809	QNS0197-001	3.5 JACK	HEADPHONE
K101	QQR1114-001Z	FERRITE BEADS	

⚠Ref No.	Part No.	Part Name	Description	Local
K103	QQR1114-001Z	FERRITE BEADS		
K104	QQR1114-001Z	FERRITE BEADS		
K801	QQR0601-001Z	COIL		
K921	QQR1114-001Z	FERRITE BEADS		
K922	QQR1114-001Z	FERRITE BEADS		
K951	QQR1114-001Z	FERRITE BEADS		
K952	QQR1114-001Z	FERRITE BEADS		
K953	QQR1114-001Z	FERRITE BEADS		
K954	QQR1114-001Z	FERRITE BEADS		
K955	QQR1114-001Z	FERRITE BEADS		
⚠LF902	QQR0673-004	LINE FILTER		
S801	QSW0619-003Z	TACT SWITCH	MENU	
S802	QSW0619-003Z	TACT SWITCH	CH-	
S803	QSW0619-003Z	TACT SWITCH	CH+	
S804	QSW0619-003Z	TACT SWITCH	VOL-	
S805	QSW0619-003Z	TACT SWITCH	VOL+	
⚠S901	QSW1041-001	PUSH SWITCH	POWER	
SF101	QAX0325-001	SAW FILTER		
SF102	QAX0666-002	SAW FILTER		
⚠TH901	QAD0121-9R0	P THERMISTOR	9Ω	
TU001	QAU0246-002	TUNER		
⚠VA901	QAF0060-621	VARISTOR	620V	
X701	QAX0799-001Z	CRYSTAL		
	LC30114-001C-H	LED HOLDER		

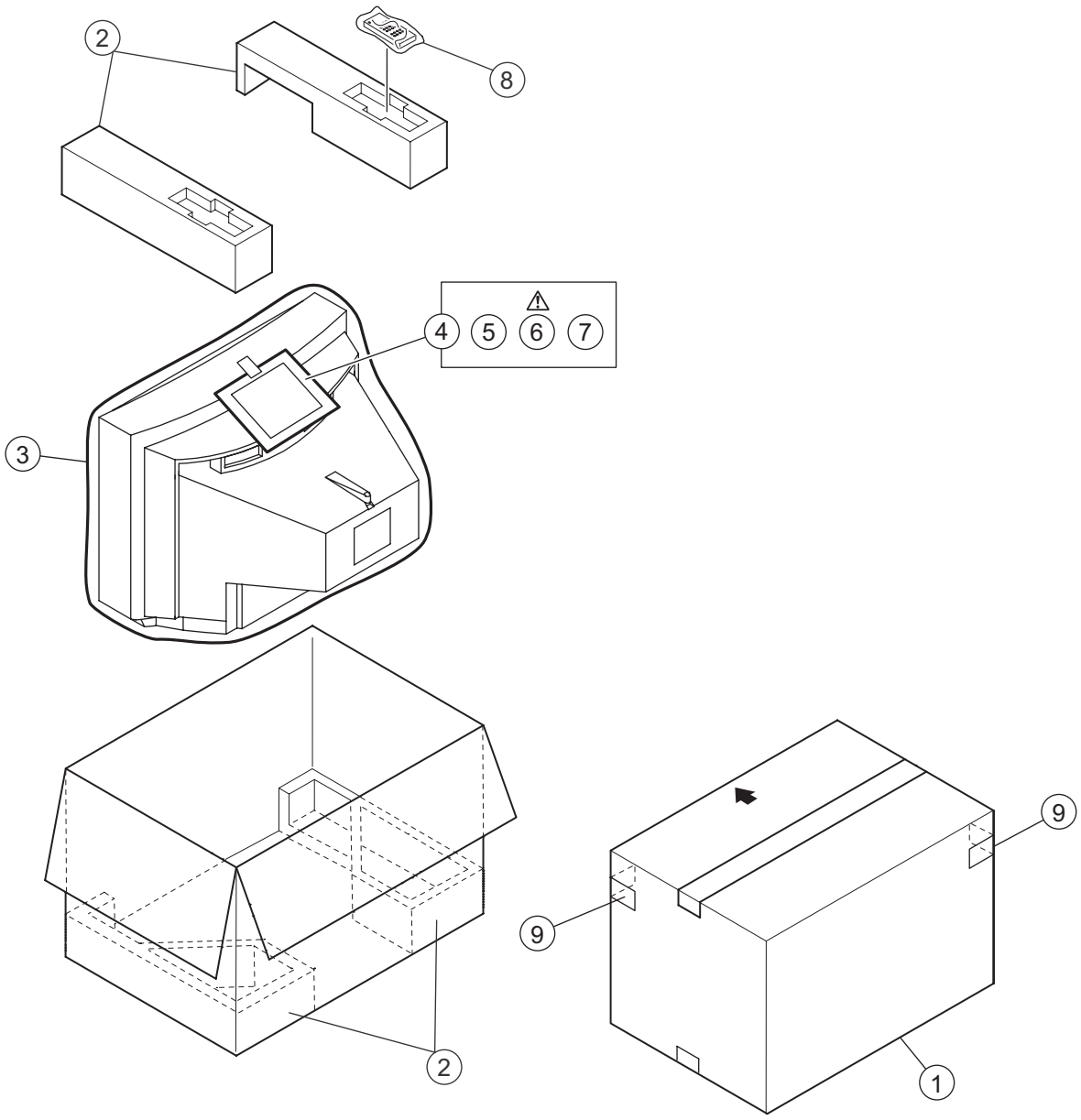
CRT SOCEK P.W. BOARD ASS'Y (SCW-3013A-H2)

⚠Ref No.	Part No.	Part Name	Description	Local
IC351	TDA6107AJF/N1	IC		
D350	MTZJ7.5B-T3	Z DIODE		
D351	EU01N-T3	SI DIODE		
D354	RGP10J-5025-T3	SI DIODE		
D355	RGP10J-5025-T3	SI DIODE		
D356	RGP10J-5025-T3	SI DIODE		
C351	QCB32HK-102Z	C CAPACITOR	1000pF 500V K	
C352	QETM2EM-475	E CAPACITOR	4.7uF 250V M	
C353	QFKC2EK-104Z	MM CAPACITOR	0.1uF 250V K	
C358	QCZ0131-821	C CAPACITOR	820pF 2kV K	
R351	QRE142J-101	C RESISTOR	100Ω 1/4W J	
R352	QRE142J-151	C RESISTOR	150Ω 1/4W J	
R353	QRE142J-151	C RESISTOR	150Ω 1/4W J	
R354	QRE142J-151	C RESISTOR	150Ω 1/4W J	
R355	QRE122J-222	C RESISTOR	2.2kΩ 1/2W J	
R356	QRE122J-222	C RESISTOR	2.2kΩ 1/2W J	
R357	QRE122J-222	C RESISTOR	2.2kΩ 1/2W J	
R358	QRZ0111-152	C RESISTOR	1.5kΩ 1/2W K	
R359	QRZ0111-152	C RESISTOR	1.5kΩ 1/2W K	
R360	QRZ0111-152	C RESISTOR	1.5kΩ 1/2W K	
R369	QRE122J-104	C RESISTOR	100kΩ 1/2W J	
L351	QQL244J-5R6Z	COIL	5.6uH J	
K355	QQR1113-001Z	FERRITE BEADS		
⚠SK351	QNZ0536-001	CRT SOCKET		

REMOTE CONTROL UNIT PARTS LIST (RM-C1261-2H)

⚠ Ref No.	Part No.	Part Name	Description	Local
	R25-8567	BATTERY COVER		

PACKING



PACKING PARTS LIST

⚠	Ref.No.	Part No.	Part Name	Description	Local
	1	GG10281-008A-H	PACKING CASE		
	2	LC10158-005B-H	CUSHION ASSY	4pcs in 1set	
	3	GG30097-003A-H	POLY BAG		
	4	GG30096-001A-H	POLY BAG		
	5	----------	BATTERY	AA/R6(x2)	
⚠	6	GGT0047-001C-H	INST BOOK		
	7	BT-54012-4H	WARRANTY CARD		
	8	RM-C1261-2H	REMOCON UNIT		
	9	GG20025-005A-H	CORNER LABEL	(x2)	